RAILROAD GAZETTE

FRIDAY, JUNE 3, 1881.

The "Fontaine" Locomotive.

TO THE EDITOR OF THE RAILROAD GAZETTE :

In these days of innovations and attacks on orthodox systems, religious, political and otherwise, it is not to be wondered at that old-established mechanical systems should also come in for a share of attacks where vulnerable points present themselves. This shows itself in an innovation of a remarkable character that has recently been made in connection with the locomotive, which considerably interferes with and upsets all preconceived notions governing the elementary principles established as a law from which there could be no departure in the construction of a locomotive engine.

The orthodox locomotive is too well known to require any special description here, but we may at all events say that it was a law, as imperative as any made by the Medes and Persians, that in its construction, and under whatever form it was given, the motion from the piston was to be connected to driving-wheels which must run in direct contact with the rails if they were to run at all.

The observance of this law is, however, no longer an absolute necessity, as may be seen by referring to a very excellent engraving published in the *Railroad Gazette* of the 25th of February last, of the locomotive engine "Fontaine," so named after its inventor, Mr. Eugene Fontaine, a gentleman well known for his inventions of several railroad appliances, and for special machinery in use for making pins, needles, etc. Mr. Fontaine is a practical mechanic, and was at one time a locomotive engineer, which may account for the remarkable ingenuity displayed in the constructive details of his novel engine.

By reference to the engraving mentioned above, it will be seen that the driving-wheels, 72 in. in diameter, are elevated and mounted near the top of the boiler, and immediately beneath, on one axle, are auxiliary wheels of a double construction, combining friction wheels 56 in. in diameter, and flanged wheels 70 in. in diameter, for rolling on the rails. The driving or upper wheels, and the friction wheels, have cylindrically turned tires, the former being in contact with and resting on the latter, through which the motive power of the engine is communicated to the rolling wheels, causing them to revolve, and, by their adhesion, enforce a corresponding propelling movement on the rails.

This combination of wheels gives 224 revolutions of the upper to 288 of the lower wheels in travelling over the rails a distance of one mile. The travel of the piston in a mile will therefore be $224 \times 4 = 896$ ft., which exactly corresponds with the travel of piston of an ordinary engine having driving-wheels 7½ ft. in diameter.

The application of the motive power being concentrated on the upper edges of the friction-wheels, appears to have a remarkable effect in propelling the engine, and, independently of the increase in the speed obtained by the varying diameters and combination of the wheels, there is good reason to believe that, after allowing for extra frictional resistances of the wheels, and also for the angular position of the cylinders and connecting rods, there is left an increase in propelling power of about 30 per cent., as compared with an ordinary engine of equal resultant dimensions.

In order to prevent slipping, and to make the frictional contact of the wheels as perfect as possible, a small steam cylinder fitted with piston is fixed to the framing on each side of the engine, both sides being so connected as to operate simultaneously on a system of levers and rods, which bring the friction surfaces of the upper and lower wheels together with greater force than is due to mere gravitation, without any additional weight being thrown upon the rails, and consequently, the slipping of the friction wheels is almost an impossibility, if properly handled.

At first sight, and on first thoughts of the "Fontaine," it would seem that in building such an engine it was like taking a step backwards 50 years, when the locomotive was yet in its infancy, and innumerable devices were being made to raise it to maturity. In fact, it was like obliterating all that had been done by the Stephensons, Hackworth, Norris, Baldwin, Rogers, and other old masters, for the satisfaction of recommencing, as it were, on a new basis, having a foundation a little higher in the world. On second thoughts, however, and after witnessing some of the performances of the engine, it became apparent that there was something in it which was worthy of investigation, and that the advantages claimed by the inventor were not altogether chimerical. The primary object in the mind of the inventor, as shown in his specification, was to produce an engine that would run at a very high speed on the rails, without necessitating the usual correspondingly high speed of piston, and he has at least successfully accomplished that desire; but apparently, not only has he done that, but he has also effected by the one operation an increase of power at no additional cost for fuel.

This achievement, which is an impossibility with an engine of the ordinary kind, is unprecedented in the annals of locomotive engineering; and if its verification can be established beyond doubt, it will deserve to rank side by side with some of the best inventions of the age.

Whether or not the inventor's claims are tenable will be best seen by a comparison of the work that can be done by engines of the old and new designs.

Taking the old design first, and assuming for our purpose the following dimensions, etc.: Cylinders 16 in. in diameter, stroke 2 ft., driving-wheels 7½ ft., and average steam pressure on pistons 100 lbs. per square inch, we find, by the rule commonly used, that the tractive force at the rails, on a level, is 6,826 lbs., and that the load it can move on a level (including engine and tender), at a speed of five miles per hour, is 830 tons; at 15 miles per hour, 732 tons, and at 60 miles per hour, 235 tons. But on an incline of 15 ft. to the mile, or one foot in 352, the load is reduced to 494 tons at five miles per hour, to 453 tons at 15 miles per hour, and to 197 tons at 60 miles per hour. (To obtain 100 lbs. per square inch average pressure on the pistons at 60 miles per hour, when the steam is cut off at 50 per cent. or less of the stroke, would necessitate carrying a very high boiler pressure, which at the slower speeds is not necessary.) In these calculations no allowance has been considered for atmospheric or weather resistances, which, on a stormy day, and especially at high speeds, may further reduce, by one-half, the efficiency of the engine.

Now, if we take the "Fontaine" engine, with its combination of wheels, which, with exactly the same piston travel gives exactly the same wheel travel on the rails as the 7½ ft. drivers, the cylinders and steam pressure also coinciding, we can state from actual performance of the engine that it has hauled from a dead stand, exclusive of itself and tender, 35 loaded cars, weighing 699.45 tons, or, say 700 tons, up a grade of 15 ft. to the mile, which weight, as compared with the 494 tons given above, is 40 per cent. more than the old style of single engine of equal dimensions is calculated to move.

On investigating whence this extra power is derived, it is at once apparent that the power given out at the periphery of the driving-wheel being applied at the upper part of the friction-wheel, is the secret and solution sought, and that the increase is proportional to the greater distance of the top of friction-wheel from the rail, as compared with the lesser distance of the axle from the rail. These distances are 63 and 35 in. respectively, by the law of leverage, a propelling force of, say 1, applied at 63 in. from the rail, will balance an opposing force at the axle equal to 178, or say 80 per cent. increase.

This large increase of power is, however, evidently greatly diminished by the extra friction involved in forcing together the driving and friction wheels when starting a train, and also by the inclined direction of the piston power, being at an angle of 17½ degrees from the horizontal line.

At present, I am not prepared to state the exact deductions due to these drawbacks, but from observations I have roughly estimated that nearly five-eighths of the 80 per cent. increase is absorbed, which would still leave a marginal extra effective power of at least 30 per cent. in favor of the "Fontaine."

I am aware that this is a startling assertion, but nevertheless I feel justified in making it; and if it can be shown that my deductions are incorrect, I hope that some of our talented experts in theory will take up the subject, and prove wherein I am wrong, and no one will be more ready than myself to acknowledge any errors which may have been made.

The engine has been running on the Canada Southern Railway almost daily for several months now, and it is only fair to the inventor to state that the engine has done, throughout, good general passenger service, but on account of the severity of the weather, and the pressure of business on the road, there has been, as yet, no opportunity for making special best performances of its highest speed; but it has accomplished all that has been required in the way of making up time, and has frequently exceeded a rate of 60 miles an hour for long distances without any apparent exertion or ill effects, while its economical consumption of fuel compares favorably with some of the best engines in this country.

If a speed of 60 miles or more an hour is really a desideratum, there is no reasonable doubt in the fact that the "Fontaine" is equal to the requirement; and it is also due to its construction to say that, while running at high speeds, it possesses the important qualification of riding steadily upon the rails, which may be accounted for by the fact that the centre of gravity of the engine is considerably below the disturbing action of the motive power, being just the reverse of ordinary engines, and more especially of those with large driving-wheels of the English type.

Mr. Fontaine is so fully satisfied with the performance of his present engine that he is having another built with a similar combination of wheels, but larger boiler and cylinder capacity; and I understand that he also intends building another, with smaller driving and larger friction and rolling wheels, to correspond with a 5½ ft. driver ordinary engine, and suitable for pulling heavy freight trains. This engine he intends furnishing with two pairs of rolling wheels to be coupled together.

A recent performance of the "Fontaine" which brought out its qualification for endurance was the taking of a special train of two official cars, weighing 66 tons, in a continous run of 235 miles, at a speed averaging very close on 60 miles an hour, and with a consumption of fuel of about 34 lbs. per mile. During this run, the admission of steam to the cylinders seldom exceeded 5 in. There was a drizzling rain for most of the distance during its performance. The engine ran cool and steadily with steam blowing off nearly all the way. Its qualification of steady riding is of the greatest importance and merits the highest commendation. Taking the engine as a whole, I consider it peculiarly adapted for high speeds, power and safety combined.

JOHN ORTTON,
Canada Southern Railway.

ST. THOMAS, May 23, 1881.

[There seems to be a fallacy in Mr. Ortton's reasoning in that he has taken the *calculated* performance of an ordinary engine and compared it with the *actual* work done by the Fontaine engine. Most persons who have had experience in making locomotive tests, know that under favorable conditions locomotives will always do more work than the calculations based on the usual data will indicate. At any rate it seems unfair to compare the work which theory indicates the one engine should do with that which the other does in practice.

It will be noted too that in the calculation it is assumed that the average steam pressure on the piston is 100 lbs. per square inch, and it is said that "from the actual performance of the Fontaine engine, the cylinders and steam pressure coinciding." Now how was the steam pressure in the cylinders determined during the actual performance? The only way that it could be known with certainty would be by taking indicator diagrams. Was this done? If not it does not seem at all certain that "the steam pressure coincided."

It will be noted that in making the fast time referred to above and also reported in our issue of May 20, page 284, the load which was taken by the engine consisted of only two cars, and this on a nearly level and perfectly straight road, with a good track. We believe few master mechanics would have any difficulty in equaling that speed with some of their ordinary engines, working under similar conditions.

That an engine with 32,000 lbs. of adhesive weight on the driving wheels should pull a load of 700 tons, or say 750, including its own weight, up a grade of 15 ft. per mile (speed and steam pressure not given) is not very remarkable. The resistance of such a train would not exceed 12.9 lbs. per ton, at say 15 miles per hour, so that its resistance would be $750 \times 12.9 = 9{,}675$ lbs. The experiments of Westinghouse in England showed that under the most favorable conditions the adhesion of a wheel on a rail is often as much as a third of its weight, so that the Fontaine engine would have $\frac{32{,}000}{3} = 10{,}666$ lbs. of adhesive resistance. With 16×24 in. cylinder and 7½ ft. wheels an average pressure of a little over 140 lbs. per square inch on the pistons would give the required tractive power. In all probability the resistance of the train would be considerably less than 12.9 lbs. per ton, if the cars and track were in good condition, so that a pressure of less than 140 lbs. on the piston would be sufficient to draw the load, and, as shown above, the adhesion is greater than the maximum tractive power required.

So far there does not seem to be anything remarkable in the performance of the Fontaine engine, nor is it clear what is gained by its plan of construction. It is said now that it is deficient in boiler capacity. If this is increased, it will then not have sufficient adhesion, and if, as is proposed, four coupled wheels are employed, the cylinder capacity will be too small. All that can be done in locomotive construction is to proportion these to each other, and to the work to be done, and it is difficult to see how any complication of gearing can either increase or diminish the amount of energy exerted on the pistons.—EDITOR RAILROAD GAZETTE.]

The Centenary of George Stephenson.

A new edition of Samuel Smiles' well-known Life of George Stephenson was issued recently, in view of the celebration of the one hundreth birthday of its subject on the 9th of this month. For this edition Mr. Smiles has written a new preface, from which we copy the following:

For the first fifty years of his life, he had everything against him. He owed nothing to luck, to patronage, to the advantages of education. He owed everything to bravery, intense conviction, and prolonged perseverance. He had to teach himself everything, from the A B C to the principles of mechanics. He had to conquer every inch of the ground on which he stood. His conquests were not easy; for arrayed against him were, first, his own ignorance, which had to be subdued by silent, persistent endeavor; and second, the opposition of men of knowledge and science, who stood united to oppose him and could only be silenced by success. At first, Stephenson stood almost alone in his belief in the powers of the locomotive engine. His experiments were carried on in silence and obscurity. They were quite unknown to the journalists, historians, and writers of the day. The great work was done without any help from authors and orators. He never contented himself with dwelling in the regions of speculation and abstraction. He worked energetically in giving life to a dormant principle, and practical realization to an abstract proposition. Yet the facts which he developed by experience were laughed at as "moonshine." There is something tragic in witnessing the determined hostility which obstructed his efforts. The whole prejudice of the scientific world opposed him. When he invented the safety lamp, he was "pooh-poohed," and regarded as an interloper. The civil engineers opposed him to a man. He was not "one of us;" he had never received an engineer's education. They would not admit his facts. They would not even inquire into his experiments. Everything that he proposed to do was demonstrated to be impossible. The civil engineers declared that it was impossible to drive a locomotive at the rate of twelve miles an hour. The engine would be driven back by the wind. If it traveled, it would be beaten by the canal boats. But it could never go at all. The smooth wheels could never "bite" upon smooth rails. The wheels would merely turn round and round, and the whole machine would stand still. It was also declared to be impossible to make a railroad over

Chat Moss without stopping short at the bottom. "No engineer in his senses," said a distinguished civil engineer, "would go through Chat Moss if he wanted to make a railroad from Liverpool to Manchester." The whole thing was declared to be "impossible." And yet the impossible things were done. What George Stephenson proposed to do he did. The impossible locomotive was run, not only at twelve, but at fifty miles an hour; and the impossible railroad was made from Liverpool to Manchester over the centre of Chat Moss. The legislature baffled him. They reported in favor of road tramways, but resisted railway locomotives. They defeated the promoters of the early railways again and again. At length railways were introduced, and like all good works, they enriched and blessed the nation. The success of the railway locomotive grew in the main from the mind of George Stephenson. The cow-boy, the picker, the plugman, the engineman, the pump-curer, the brakesman, the colliery enginewright, is truly the parent of the great railway system of the world. In his mind the essential parts of it were first conceived; and by his hand and genius they were made visible and real. The locomotive railway started into full life under the eyes of a single generation. The opening of the Liverpool and Manchester Railway on Sept. 15, 1830, was the era of a great change in all popular ideas respecting locomotion. It proved the germ of infinite change in all civilized countries. It imparted a new series of conditions to every rank of life—to every kind of work, possession and intercourse. It brought to an equality the richest and the poorest in the facilities for traveling. George Stephenson's prediction "that the time would come when it would be cheaper for a working man to make a journey by railway than to walk on foot," is already realized. The iron rail proved a magician's road. The locomotive gave a new celerity to time. It virtually reduced England to a sixth of its size. It brought the country nearer to the town, and the town to the country. To America, Canada and other countries it opened up the boundless resources of their own soil. It energized punctuality, discipline and attention; and proved a moral teacher by the influence of example. When the first English lines were projected, great were the prophecies of disaster to the inhabitants of the districts through which they were to be forced. The same prejudice existed in France. When a railway was projected to pass through Lyons, it was predicted that the city would be ruined—*Ville traversée, ville perdue!* Now it is the city without the railway that is regarded as the "city lost." Towns were formerly built along the banks of rivers. Now they are built along the banks of railways. The railway line is like a river course. People build houses and settle down at every railway station. Thus the population of London has been extended more than twenty miles round the original city. Without George Stephenson, Sir Rowland Hill might have lived in vain. It was the locomotive that made cheap postage possible. Mail coaches could never have done the work. Letters, books and newspapers are now conveyed by the ton, at marvelously cheap rates, and with extraordinary regularity and dispatch. Two celebrations of the openings of railways have occurred since the death of George Stephenson. The first was the jubilee of the Stockton & Darlington Railway, on Sept. 27, 1875. That line had originally been formed for the conveyance of coal to the seaside, as well as for inland sale. It now forms part of the Northeastern Railway, 1,490 miles in length. The second jubilee was held—not at Liverpool, where the triumph of the passenger locomotive was first achieved—but at Turin, in Piedmont! The young kingdom of Italy was among the first to recognize the great advantages of railways in opening up and uniting the great provinces and cities of the state. The jubilee at Turin was worthily celebrated on Oct. 8, 1879. The king was present. There were processions and ovations. A striking likeness of Stephenson, in marble, was unveiled in front of the magnificent railway station. Immediately after the event, the King of Italy kindly and thoughtfully conferred an order of merit upon the author of this work for having commemorated the life of the great engineer. The centenary of George Stephenson's birth occurs on the 9th of June, 1881. It will be celebrated in London, Chesterfield and Newcastle. An effort will be made to complete the Railway Orphanage at Derby, and to establish the Scientific College at Newcastle. Both are excellent objects. Every friend of benevolence and education must wish them all success.

The Eastern Railroad Association.

We have received a copy of the fourteenth annual report of the Eastern Railroad Association, which is for the East what the Western Railroad Association is for the West, that is, it undertakes for the railroad companies belonging to it investigations into the validity of patents, and defends suits brought for infringements. Though the older of the two associations, it is less widely known, its reports not having been published heretofore. The list of members gives the following as the active companies, under some of which more than twenty subordinate corporations are included:

Company.	Miles.
Allegheny Valley	259
Baltimore & Ohio	1,528
Boston & Albany	372
Boston, Concord & Montreal	166
Boston & Lowell	151
Boston & Maine	606
Boston & Providence	72
Boston, Barre & Gardner	37
Camden & Atlantic	67
Catasauqua & Fogelsville	25
Central of New Jersey	486
Central Vermont	410
Cheshire	89
Connecticut & Passumpsic Rivers	147
Concord	142
Connecticut River	80
Connecticut Western	69
Concord & Claremont	89
Danbury & Norwalk	34
Delaware & Hudson	665
Eastern	282
Fitchburg	188
Housatonic	126
Lehigh Valley	303
Long Island	320
Manchester & Lawrence	26
Maine Central	355
Naugatuck	66
New York Central & Hudson River	1,118
New York, New Haven & Hartford	206
New York, Providence & Boston	82
New Haven & Northampton	137
New London Northern	158
New York & New England	425
Northern Central	343
Northern (New Hampshire)	82
Northeastern (South Carolina)	102
Ogdensburg & Lake Champlain	118
Old Colony	462
Pennsylvania	2,407
Pennsylvania Company	864
Pittsburgh, Cincinnati & St. Louis	1,507
Philadelphia & Baltimore Central	57
Philadelphia & Reading	850
Philadelphia, Wilmington & Baltimore	207
Carried forward	16,270
Brought forward	16,270
Pennsylvania & New York	95
Portland & Ogdensburg	94
Providence & Worcester	66
Providence, Warren & Bristol	14
Raleigh & Gaston	97
Richmond, Fredericksburg & Potomac	82
Richmond & Petersburg	25
Rome, Watertown & Ogdensburg	409
Seaboard & Roanoke	80
Troy & Boston	46
Vermont Valley	24
West Jersey	163
Wilmington, Columbia & Augusta	192
Wilmington & Weldon	178
Worcester & Nashua	95
West Chester & Philadelphia	26
Total	17,956

REPORT OF EXECUTIVE COMMITTEE.

NEW YORK, March 9, 1881.

To the Eastern Railroad Association:

GENTLEMEN: Your Executive Committee now submit the fourteenth annual report of the Association, accompanied by the Treasurer's statement and a report from the General Counsel, showing the business transactions of the year ending Dec. 31, 1880, and take great pleasure in assuring the members of our Association that the advantages of the organization are being still more appreciated by the railroad interests of the country, as is shown by the increase in our membership; and, also, by the fact that nearly every member has, during the year, taken advantage of the privileges extended, by submitting one or more questions, the decision of which has, in some instances, been of signal advantage to the inquirer, as well as to the Association at large.

During the year 1880, six companies have been added to our membership, and several of our older members have largely extended their organizations by mergers or leases—thus increasing our mileage, from 14,218 miles, as reported last year, to 17,956 miles at this date. And, in this connection, we would, with great respect, call the attention of our members to the fact that, by reporting such merger, lease or operating agreements, with the mileage of the road acquired, to our General Counsel, immediately upon the consummation of such negotiation, the privileges and protection of the Association is at once extended to that company.

It is with great satisfaction we state that, while the number of questions submitted as to the validity of letters-patent, and the number of cases of infringement of valid patents, which have been referred to your Committee for settlement, have largely increased over former years; yet, in the matter of litigation upon cases originating in the past year, our expenditures have been *practically nothing*. Two suits were instituted, but both have been withdrawn. This may possibly be exceptional, but it is, nevertheless, remarkable, when the mileage of our membership is considered.

Whatever disbursements have been made during the year for our legal department are chargeable to suits of long standing that are yet in the possession of the courts.

We would call your especial attention to the details of settlements that have been made during the past year by your Executive Committee of claims against members infringing valid patents, as shown in the report of the General Counsel, as the results are particularly satisfactory, and furnish conclusive evidence that the policy of the Association relative to such questions, and of the value of our organization, is advantageous to both parties in interest, *i. e.*, the railroad company and the patentee, and would ask that the following important points elicted may be noted:

First—That the patents upon which these claims were based had been reported upon *as valid* either by your Executive Committee or by decisions of the United States courts, or by the decision of both Committee and courts.

Second—That the manufacturers who furnished the articles held to infringe the patents submitted to the requirements of your Committee, and either settled the claim in full or paid such equitable proportion thereof as was considered fair and just.

Third—That the patentees or claimants compromised on very reasonable terms, relinquishing, in each case, the enormous damages that had been awarded them by the courts.

In the Williams headlight case alone, the liability of our *members*, as measured by the decision of the court, would have amounted *to more than one million dollars*.

Without the aid of the Eastern and Western railroad associations, as now organized, we feel assured it would have been impossible to accomplish the results now reported.

Whenever a patent which has been pronounced valid, either by your Executive Committee or by the proper legal tribunal, has been infringed by one of our members, it is a proper subject for negotiation and settlement under our rules; but such duty is never assumed unless upon a written application from a member infringing, and the advantages of all settlements so effected apply equally to the entire Association. No other adjustment by your Committee is admissible, nor is such adjustment binding upon any member if, in his judgment, he can make better terms himself in his own behalf.

In all such settlements it is the fixed policy of your Committee to avoid recommending, either inferentially or otherwise, the adoption of any patented invention, and to prevent, by all possible means, the influence of the Association being exerted as advocating the claim of any patentee or owner.

We deal only in facts as to the *validity* of patents, and not with the question of the practical value or usefulness of the device patented, and all attempts on the part of patentees or owners of patents to use the name of this Association as recommending their patented devices have been, and will continue to be, met with such action as will effectually correct such unauthorized use of our name.

Our records show that the claims of patentees for devices used in railroad operation are increasing each year; but the effect of our Association has so modified the status of the inventors as to make them willing to await our action before taking active measures requiring either a purchase or suit, and the railroad manager is thus fortified against the imposition of unjust demands to save expensive litigation. In contrast with the condition of affairs bearing upon said railroad patents as they now exist, we beg leave to quote from an argument made before the United States Senate Committee on Patents, on Jan. 27, 1874, by the Hon. W. D. Bishop, then President of the New York, New Haven & Hartford Railroad Company, showing the difficulties and costly outlays—often duplicated—that railroad companies were subjected to prior to the influence of our Association being exerted in their behalf and for their protection, viz.:

"Consider for a moment how railroads have been affected by these patent claims. We would start a railroad. We would make a contract for its grading, for the track-laying, and the buildings and equipments. We would make a contract with one man to build the bridges, and pay him his price. We would make a contract with another man to lay the tracks, to furnish the spikes, frogs and switches. We would make a contract with another man to furnish the locomotives complete; with another man for the best cars, complete and ready to run. We would pay for them when we got them, and suppose we had a right to run them. But, after we had commenced running the road, what would be the condition in which we would find ourselves? First, along would come a man and complain that there was a patent angle-block on some bridge that infringed some patent he owned, threaten us with a law-suit, and we would pay for the angle-block, not knowing whether we had any right to use it or not. Next would come along a man and claim we had a frog that infringed a patent of his; and we would pay for the frog. Then along comes another man and claims that the switch is an infringement of his patent, and we would pay him. Then along would come a man and claim that he, also, had a patent upon that same switch, and that the patent of the man we had paid was only an improvement upon his original patent. So we would pay number two upon the switch. Thus we paid for one patent after another until we come to the locomotives, and find them loaded down with fifteen or twenty patents that we knew nothing about, and we would have to pay for them. Then we come to the brakes on the cars. First comes along Mr. Turner; he presents his patent, showing by its date that it was the earliest patent issued from the Patent Office for a double-acting brake of that general character. We would look into it. 'Pay or be sued,' he would say. We would pay him. Then along comes Mr. Hodge (remember, we are using only one kind of brake all this time). Mr. Hodge says: 'True, you have paid Mr. Turner; but this car, that you have bought and paid for, and supposed you had a right to use, has got my brake on it, and is an improvement on Mr. Turner's.' He shows his patent, and we pay him. Then along comes Mr. Stevens; he, also, has got a patent, and we pay him. Then we thought we had got through, and began to rest a little, when along comes Mr. Tanner, who had previously been selling the Turner brake, and says: 'I have got a brake that all these others infringe;' and we are asked to pay over again."

All just claims are now negotiated to a settlement if possible, and unjust claims, when resisted under the auspices of our Association, are seldom heard of afterward.

As an additional means of protection, it is respectfully suggested that in no case shall any new device, or alleged improvement on working devices, be adopted or allowed to go into use upon the lines of our members without the full knowledge and consent of their managing officers. And also, that before their adoption or use all such new devices or improvements shall be referred to the Association for examination, to determine if they can be freely used, or, if patented, to determine if they can be used without infringing other patents. Should the managing officers issue and enforce orders to this effect, we believe that such action would be productive of very beneficial results.

In compliance with communications read at your last meeting and the then informal expression of opinion of many of our members the general office of the Eastern Railroad Association has been removed from Boston to New York, and is now located in the Grand Central Depot, Forty-second street, and it is believed that the best interests of the Association have been duly considered by such removal; the location is more central for our members, and much time and expense will be saved to our General Counsel in his necessarily frequent visits to the Patent Office at Washington, and to other points where his presence is required in the interest of the Association.

The Treasurer's Report shows as follows, of date Dec. 31 1880:

Balance on hand Dec. 31. 1879	$31,225.28
Cash received during the year 1880:	
From assessments	26,233.31
" interest on investments	1,489.57
" Williams settlement	5,128.14
	$64,076.30
Disbursements during 1880, including Williams headlight settlement	20,722.14
Balance Dec. 31, 1880	$43,354.16

In view of the additional mileage and the increased gross earnings of our members, your Committee deem it advisable to make a further reduction in the annual assessment, feeling assured that the revenue will be sufficient to meet expenses without encroaching upon our investments.

We would therefore recommend that the assessment for the year 1881 be fixed at 50 cents per mile in length, and $50 upon each million of dollars of gross receipts of *all roads operated* (whether owned or leased) by each member of the Association.

In closing this report your Committee would express their unqualified approval of the manner in which the duties of General Counsel have been performed by Mr. Andrew McCallum. To his untiring and scrupulous attention to the interests of the Association are they indebted for the rapid dispatch of business which was imperative during the past year to meet the necessities of our members, and for his clear and exhaustive reports which have enabled your Committee to arrive at conclusions and make decisions that have so far proved acceptable and been fully sustained.

By authority of the Executive Committee,

STRICKLAND KNEASS, President.

REPORT OF THE GENERAL COUNSEL AND SECRETARY.

NEW YORK, March 9, 1881.

To the Executive Committee of the Eastern Railroad Association:

GENTLEMEN: I have to report that during the year 1880 there has been a considerable increase in the general business of the Association.

The membership has increased by the admission of the following roads:

The Camden & Atlantic Railroad.
The Boston, Barre & Gardner Railroad.
The Pennsylvania & New York Canal Railroad
The Summit Branch Railroad.
The West Chester & Philadelphia Railroad.
The Springfield & Northeastern Railroad.

Some of these companies are portions of older organizations in our membership that have been added thereto, and it is believed that other and considerable additions have been made, of which this office, through inadvertence, has not been advised.

A list of the branches and leased lines operated by the members, so far as ascertained, is hereto appended, and it is respectfully requested that a critical examination of the same be made, so that all errors or omissions may be corrected.

As shown by the list, the total mileage of our membership is at the present time 17,956 miles.

INQUIRIES AND REPORTS ON PATENTS.

A greater number of inquiries respecting the validity of letters-patent and claims for infringement of patents have been submitted by the members during the past year than in any previous year since the organization of the Association.

There have also been submitted for examination many new inventions, improvements in machinery, and appliances applicable to railroads, with a view to ascertain if they could be used without infringing existing patents, and in some instances to determine if they should be patented in the interest of the company.

This last subject of inquiry may be designated new business, but is in accordance with suggestions made in previous report, and it is with great pleasure I now show that your

approval of my suggestions has been so generally appreciated by our members, particularly as it clearly demonstrates that the objects sought to be attained by the Association are being more fully accomplished, and its benefits are made available to a greater extent each year.

There have been 150 inquiries concerning patents and claims made during the year, and the correspondence shows that one or more inquiries asking for opinions or advice have been submitted by nearly every member.

A number of these inquiries have been answered from information previously acquired and now a part of our records, but it was necessary to make examinations and prepare reports on 83 new subjects, which, under the rules, were acted upon by your Committee.

So far as I am informed, the decisions of your Committee on the questions submitted and the advice given in accordance therewith have been accepted by the members, and I have every reason to believe that most, if not all, the claimants and inventors whose claims have been passed upon by your Committee have acquiesced in the justness of the conclusions reached.

A complete list of the patents reported upon during the years is hereto appended, from which it will be seen that this branch of business required a careful examination of more than 800 letters-patent.

CORRESPONDENCE.

The total correspondence of this office for the year is represented by 1,860 letters received and sent. This does not include the correspondence of the Treasurer's office, nor the written and printed circulars and other printed matter, of which a large quantity has been forwarded to the members.

In the matter of correspondence I was instructed by a resolution adopted March 10, 1880, to notify the members that applications for information in regard to any patented device must be made through the President, Vice-President, General Manager or Superintendent of the company, or such other officer or agent of said company as might be specially authorized.

A circular was therefore issued explaining the object of the resolution, viz.: to prevent any improper use being made of the information furnished by the Association, and to insure that the action of the Committee should reach the managing officers. The request embodied in the circular was generally complied with, and a roster of authorized correspondents prepared from the returns made. It is now suggested that the authorized correspondents be named by each member upon the annual returns of mileage and gross earnings, submitted for purposes of assessment, thereby obviating the necessity for separate returns, and furnishing in compact from all the information required form the members for general business purposes.

LIBRARY AND MUSEUM.

I have to report that valuable additions to the library have been made during the year. A complete set of the abridgments of British patents and a number of law reports on patent cases have been purchased, as also copies of United States patents, relating to railroads.

Other publications of the Patent Office are added to the library as published.

The expenditure on this account, $617.86, may appear large, but I am satisfied that the acquirement of the Abstracts of British Patents alone has saved our members more than the whole outlay. Such books and records are the tools required for my work, and if they are not at hand much valuable time must be consumed in searching for them.

All information that can be obtained relative to railroad practice and patents connected with railroads is of value in the proper prosecution of my duties. I therefore respectfully ask permission to make further expenditures on the library.

Some models have been added to the museum, but, owing to the great increase in the number of patents examined, and the cost of providing room for the storage of models in such manner as to be easy of access for ready reference, I would now ask that no models shall be sent to this office, excepting where the device cannot be properly illustrated by drawings. In cases where they are deemed necessary, a special request will be made. I am still, however, of the opinion that all railroad companies should themselves preserve models of such new devices as they may adopt, and have them properly dated and recorded, to be used in defending themselves and others against claims for infringement of patents for the same devices subsequently granted to fraudulent patentees.

The practice still continues of taking out patents for articles in use on railroads by parties who did not invent them, and therefore I again repeat the recommendation that all new improvements produced in railroad shops should be patented as the best means for preventing this infamous practice.

REMOVAL OF THE OFFICES TO NEW YORK.

By direction of your Committee the general business offices of the Association were removed in the early part of November, 1880, from the city of Boston to the Grand Central Depot, in the city of New York. The new offices are in every particular suitable for the present requirements of the business, and, owing to their more central location as respects the entire membership, a great saving in time is effected in moving to the various points where my presence is required in the interest of the Association; the change of location will therefore result in a saving of time and expense.

CONGRESSIONAL.

Since our successful opposition to the extension of the Ezra Miller patent, as noted in last report, there has been no occasion to call for action on our part in any matter of proposed legislation relating to patents.

Careful attention, however, is being given to the bills and petitions referred to the Committees on Patents of the United States Senate and House of Representatives, and any measure which is deemed inequitable or prejudicial to the best interests of the members will be properly explained and exposed before the proper committee.

LEGAL.

Under instructions of your Committee, as conveyed by a resolution of May 12, 1880, I assumed the title of General Counsel in addition to that of Secretary of the Association, and have since continued to perform the duties of both offices.

As General Counsel, I have to report that during the year *only two new suits* were commenced against members for alleged infringement of letters-patent, viz.:

Nathan & Dreyfus *vs.* Providence & Worcester R. R. Co.; W. H. Smith *vs.* Long Island R. R. Co.

The first of these, for infringement of the Gresham injector patent, was withdrawn shortly after it was commenced, and the other, covering certain improvements in lighting and ventilation, was discontinued after answer to the bill of complaint was filed, so that there has been practically no expenditure during the year on account of *new litigation*.

The legal expenditure, omitting the Williams headlight settlement (which is offset by credits), is about the same as last year, and most of it is on account of suits of long standing. Omitting the item $958.14, for general expenses, which includes fees of agents and experts, the expenditure may be classified as follows:

On account of particular suits commenced prior to Jan. 1, 1879	$1,685.60
On account of suits commenced subsequent to Jan. 1, 1879	394.85
On account of suits commenced during year 1880	

The marked discrepancy between the amounts paid on suits commenced prior to 1879 and those commenced since that date is due to the change in the method of conducting this branch of the business, as more fully explained in last report.

SETTLEMENT OF VALID CLAIMS.

The transactions of the year in this branch of the business have been quite important, and the following details may be interesting:

THE RUBBER STEP PATENTS.

Certain patents granted to George A. Keene for improvements in rubber steps for carriages and cars, and owned by the Rubber Step Manufacturing Co., of Boston, Mass., were, after two trials between manufacturing firms, fully sustained in the United States courts, and as claims were being made against members for infringement, it was thought advisable that some arrangement with the owners of the patents should be made, and an agreement was entered into whereby each and all of our members could settle for past infringement at the rate of forty cents per step, and upon all future purchases made from the Rubber Step Manufacturing Co. a liberal discount from the regular market prices was secured. Thus all litigation because of infringement was avoided, and liberal terms were obtained for the members who desired to use the patented articles.

THE "LITTLE GIANT" INJECTOR.

The manufacturers who made and sold this device were sued for infringing the patent owned by certain other manufacturers, to wit: No. 57,057, granted to James Gresham, Aug. 7, 1866, for improved injector, which had been examined and accepted as valid by the Association.

After an elaborate and vigorous defense in the United States courts on the part of the manufacturers of the "Little Giant," the said Gresham patent was sustained, and immediately thereon the companies using it were notified of the infringement, and that suit would be brought unless a settlement therefor was effected.

A suit against one of our members was instituted, and a number of others were in preparation, while some of the members of the Western Railroad Association were similarly situated. It therefore became a matter of great importance that negotiations for an adjustment of these claims should be opened. To this end, the influence of both associations was brought to bear upon the manufacturers, which finally resulted in a settlement of the claim by the infringing manufacturers and the granting of a release for past infringement to all railroad companies members of the two associations.

This was accomplished without cost to either association; the only consideration on the part of the members being that they should recognize the validity of the Gresham patent by refraining from purchasing any new injectors embodying the Gresham improvement, except from the owners of the patent or their authorized agents.

LOOSE-GLOBE AND HINGED-TOP LANTERNS.

Letters-patent for improvements in these lanterns were granted to J. H. Irwin, May 2, 1865, and Oct. 24, 1865, and assigned to J. McGregor Adams, of Chicago.

The validity of the patents was contested in a suit brought against the Illinois Manufacturing Co., which resulted in the patents being sustained by the Court.

A settlement being imperative, the same influence as in the injector case was brought to bear on the manufacturers of these lanterns, and with the same result, without cost to the railroad companies.

THE WILLIAMS HEADLIGHT BURNER.

The settlement of this claim is perhaps the most important yet effected by the Association.

As noted in the last report, the suit commenced by Mr. Williams, the inventor, against the Rome, Watertown & Ogdensburg Railroad Company was defended by the manufacturers, and resulted in the patent being sustained by the Court. The final decree awarded Mr. Williams $224.95 per burner, and decided that all burners used for burning kerosene oil in locomotive headlights infringed the patent, excepting of course those made and sold by the patentee.

In another suit in the same Court, the patent was again sustained, *res adjudicata*, and, as nearly all the members of our Association were liable for damages (aggregating more than one million dollars), a settlement was at once sought, and through the influence of both associations it was adjusted, and the whole claim settled for $50,000—three-fourths of which ($37,500) was paid by the manufacturers of the infringing burners, while the total charge against the members of this Association amounted to only $5,140, for which a full release was secured to our members from all liability for infringement of the patent.

PENDING LITIGATION.

With respect to pending litigation, I have to report progress made in some of the suits of long standing.

In the United States Supreme Court the case of Mellon & Matthews *vs.* the Lehigh Valley Railroad Company, locomotive wheel tires, came up for hearing, but the counsel for complainants were not prepared. It was therefore continued until next term.

The suits of Emigh & Stevens against the Baltimore & Ohio Railroad Company have been advanced a step by the filing of the Master's report awarding profits and damages to the amount of $176,005. Exceptions were taken to the reports, which will be argued in due season.*

Nothing further has been done with the other cases on the Stevens brake.

With respect to the Tanner brake litigation, I have to report the death of the claimant, Mr. Thomas Sayles, Nov. 19, 1880. This of course abates all suits commenced by him until they are properly revived by his legal representatives.

In the Locomotive Engine Safety Truck Co.'s cases, the suit against the Pennsylvania Railroad Company has been appealed to the United States Supreme Court.

The other suits on this patent remain *in statu quo*.

An effort was made to compromise these suits on reasonable terms, but so far without success.

The Hien Car Coupler Co.'s suit against the Pennsylvania Railroad Company is virtually terminated by the surrender and reissue of the patent on which it was based, but whether a new suit will be commenced upon the reissued patent, I am not informed.

The surrender and reissue of the patent showed conclusively that they had no valid patent, and that the defense was good; and the reissue does not help their case.†

The Williams headlight cases are of course terminated by the settlement hereinbefore referred to, and the suits withdrawn.

In the Colgate cases against the Pennsylvania Railroad Company and Baltimore & Ohio Railroad Company, for alleged infringement of the Simpson patent for submarine cables, some testimony has been taken, but the cases are not yet ready for trial.

The suit of G. S. Appleton against the Rutland Railroad Company for infringement of the Appleton switch will come up for trial before a jury in the latter part of February, 1881. Due preparation for the defense is made, and it is confidently expected that the verdict will be for the defendant.*

With respect to other pending litigation I have to report that while all the cases are receiving proper attention on the part of the Association, no action has been taken by the claimants that we are aware of to get them ready for trial.

Some of these cases are of long standing in court, and the presumption is that they have been abandoned.

A complete list of the pending cases, and also of such cases as have been finally disposed of during the year, is hereto appended.

Respectfully submitted,

ANDREW MCCALLUM,
General Counsel and Secretary.

* The argument on exceptions to the Master's report to reduce the damages took place in February, 1881, and resulted in a reduction of the amount from $176,005 to $85,400, thereby effecting a saving of $90,605. The cases have since been appealed to the United States Supreme Court.

† This car-coupler suit was dismissed with costs to defendant, in March, 1881.

* This switch suit also terminated in favor of defendant, thus ending the litigation on the Appleton patent.

THE SCRAP HEAP.

Locomotive Building.

The Baldwin Locomotive Works in Philadelphia have just completed six new passenger engines for the New Jersey Central with 19 by 24 in. cylinders and 5 ft. 10 in. drivers. Several of them will be in use on the Long Branch Division this Summer.

The Taunton Locomotive Manufacturing Co., at Taunton, Mass, has declared a dividend of 10 per cent. to its stockholders.

The proposed new locomotive works, at Rome, N. Y., are to have a capital of $200,000, of which about two-thirds has been raised in Rome. This will not start a very extensive shop.

Car Notes.

The New York, New Haven & Hartford shops in New Haven, Conn., are building several passenger cars for the Naugatuck road. The Naugatuck shops in Bridgeport, Conn., are building two combination baggage and smoking cars.

The Industrial Works, at Bay City Mich., have shipped steam shovels and derrick cars to the Providence & Worcester and the Michigan Central, and are now building others for the New York & New England, the St. Paul, Minneapolis & Manitoba, the Minneapolis & St. Louis and the Memphis & Charleston roads.

McKee & Fuller, at the Lehigh Car Wheel and Axle Works in Catasauqua, Pa., are making 1,200 car wheels and axles for small plantation cars, to go to the Sandwich Islands.

The old firm of W. C. Allison & Co., of Philadelphia, has been dissolved in consequence of the death of Mr. T. E. Allison. The firm will be hereafter W. C. Allison, the "Co." being dropped. The change will make no difference or interruption in the works, which employ a very large force, and are just now completing a large order for freight cars for the Texas & Pacific road.

J. G. Brill & Co., in Philadelphia, are building several double-decked open cars for the new steam railroad along the beach at Cape May.

The Jackson & Sharp Co., in Wilmingtan, Del., recently shipped one baggage and two passenger cars for the Elberton Air Line road, and have nearly completed 13 passenger cars for the Richmond & Allegheny road.

The New Brunswick Railway shops, at Gibson, N. B., are building a number of new cars and new standard-gauge trucks for the old cars on the road.

Bower, Dure & Co., at Wilmington, Del., are enlarging their shops considerably.

Bridge Notes.

Mr. C. Shaler Smith, of the Baltimore Bridge Co., has just completed ten spans of iron bridge on the Atchison, Topeka & Santa Fe, and is building 12 spans for the Gulf, Colorado & Santa Fe.

Clark, Reeves & Co., at Phœnixville, Pa., have contracts on hand for iron bridges for the Delaware, Lackawanna & Western, the Philadelphia, Wilmington & Baltimore, the Old Colony, the Great Western, Morgan's Louisiana & Texas and for some of the new lines in Mexico.

The Massillon Bridge Co., in Massillon, O., has just completed an iron highway bridge in Rome, N. Y., carrying Court street over Wood Creek.

The Pacific Bridge Co., of Oakland, Cal., has taken a contract to build a bridge over the Yamhill River at La Fayette, Or., for the Oregonian Railway. It will be 100 ft. span and 80 ft. above the water.

Iron and Manufacturing Notes.

The St. Albans (Vt.) Rolling Mill is making 3,000 tons of steel rails for the Central Vermont, and will soon begin on orders of 1,000 tons for the Portland & Ogdensburg and 1,000 tons for the Northern (New Hampshire) road. Part of the rails are from steel made at the mill and part from English blooms.

The Laclede Rolling Mills, in St. Louis, are being repaired and improved. New engines are being put to all the rolls.

An exchange says: "The Putnam Machine Co. of Fitchburgh, has closed a contract with a California, railroad for the largest order of railroad tools ever taken by the company. The order includes engine laths, double-headed driving-wheel lathe, one driving-wheel lathe, one car-wheel borer, one 13-in. stroke slotting machine, one 150-ton wheel press, and one 300-ton wheel press, a 14-in. stroke shaping machine, two goose neck drills, bolt cutters, one 100-horse power steam engine, six Putnam forges and many smaller tools."

It is proposed to build a new blast furnace in Utica, N. Y., and a company will probably be formed.

A Strange Accident.

As the St. Louis express train No. 11, on the New York Central & Hudson River Railroad, was coming up the river last night, it met a freight train near Hudson going down. For some unknown reason a swinging bar on a freight car door swung open just as the sleeping coach Saratoga was passing. The bar, which was an oak stick some 6 in. wide by 1½ in. thick, struck the side of the Saratoga end on, going through the timbers as if it had been a cannon ball. The forward end of the car was completely wrecked, and nearly all the windows on the side were broken. At the time of the accident the sleeping coach conductor was sitting in the forward end of the car on the opposite side from the freight car. One of the timbers from the side of the sleeper, driven in by the freight car bar, shot across the car with lightning speed and went through the window on the other side, barely missing the conductor's head and covering him with broken glass and splinters. The mischievous bar lay at his feet. His escape, and that of several passengers, was very narrow.—*Buffalo Commercial Advertiser*, May 23.

RAILROAD GAZETTE

Published Every Friday.

CONDUCTED BY

S WRIGHT DUNNING AND M. N. FORNEY.

CONTENTS.

EDITORIAL ANNOUNCEMENTS.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Addresses.—*Business letters should be addressed and drafts made payable to* THE RAILROAD GAZETTE. *Communications for the attention of the Editors should be addressed* EDITOR RAILROAD GAZETTE.

Advertisements.—*We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay,* EXCEPT IN THE ADVERTISING COLUMNS *We give in our editorial columns* OUR OWN *opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.*

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published*

THE MASTER CAR-BUILDERS' ASSOCIATION.

Those who were present last year at the convention of this Association in Detroit will remember that a considerable part of the first and second day's proceedings was devoted to the discussion of some proposed measures of replenishing its treasury and increasing its usefulness. The first of these was proposed by Mr. Davenport, who moved "that the Secretary of the Association be instructed to prepare a circular to send to the general manager of each railway in the United States and the Canadas, asking him to contribute $10 per annum to defray the expenses of the Master Car-Builders' Association." An animated discussion followed in which it was shown that no money was needed at present, and some of the members took the ground that efforts should not be directed "to increasing the amount of money in the treasury, but to making the Association so useful that general managers will see the advantage of it." Another resolution was proposed, which contemplated the appointment of a committee "to prepare a statement of the objects of this Association, to be presented to the managers of railroads, with the request that the latter send representatives to its meetings for the purpose of aiding in carrying out these objects."

This resolution, it was said, contemplated that the "aims of the Association should be explained to the general managers," and that its members should say in effect to them: We present to you an opportunity of sending your representatives, and through these representatives you can have a voice in controlling its action. If you have another man who you think could represent you better than your master car-builder, send him. It was also proposed to go further "and make the representation of each road proportionate to its importance."

These propositions led to an animated discussion, and a good deal of opposition was expressed to the admission to membership, as the representatives of railroad companies, of persons who are not car-builders.

Mr. Raymond argued in favor of taking steps to induce the railroad companies themselves to become members of the Association.

Mr. Forney thought that they would incur considerable obligation in becoming members, which the companies might object to assuming, while merely to send representatives does not bind them in any way.

As the result of the discussion the subject was referred to a committee, which reported the following resolution on the opening of the second day's session:

"*Resolved*, That a committee of five members, including the President, be appointed to prepare a statement of the objects of this Association, to be presented to the managers of the railroads of the country, with the request that the latter send representatives who are master car-builders, or foremen in the car departments, to these meetings, for the purpose of aiding in carrying out these objects. The committee to be authorized to call a special meeting of the Association if they think it expedient to do so, and to make a report to the next meeting, and to recommend measures for increasing the efficiency of the Association and enlarging its usefulness, and to correspond with said managers, with a view to secure their promise, so far as possible, that their companies will subscribe to this Association, and send the heads of their respective car departments to its meetings."

This resolution was very fully discussed, the chief point at issue being whether it should require that the representatives to be sent should be car-builders, or whether railroad companies be allowed to send persons not connected with the car departments. It was argued on the one hand that generally the managers of railroads would select their master car-builders to represent them, but that at this and previous meetings a number of companies sent representatives to deliberate on the rules governing the inter-change of cars who were not directly employed in the car departments of their roads, and that as Mr. Adams remarked, "companies want the privilege of sending whom they are of a mind to send. If their master mechanic or superintendent or assistant superintendent, or any man occupying a position on the road could represent them better, or be spared at the time better, they want the privilege of sending him."

On the other hand, those who opposed the admission of representatives who are not expert car-builders took the ground that to do so would change the whole character of the Association, and would permit men to take part in the deliberations who are ignorant of car construction, or, as one member put it, "who cannot tell the difference between a journal-box and a railroad frog." Another member pointed out that it was unconstitutional to admit persons who are not "master car-builders, or foremen of railway car shops." This objection seemed to be well grounded, and ultimately proved fatal to the whole measure. Some member moved that it be laid on the table, and this motion was carried without discussion, which was, perhaps, the wisest action that, under the circumstances, could have been taken.

Notwithstanding this action, and the apparent failure of the effort "to increase the efficiency of the Association," which some of the members were honest in making, the discussion probably did some good by calling attention to the need of some action of this kind. There is no doubt of the fact that the deliberations of the car-builders' organization are regarded by many railroad officers as of little practical value, and its meetings, they think, afford more or less harmless recreation to the members, or are the occasion of a great deal of pernicious conviviality. This view, we believe, is quite erroneous and unfair. Through the deliberations of the members at their annual meetings very much has been accomplished of very great value to railroad companies. If they have done nothing else they have created a sentiment in favor of uniformity of car construction, and a faith in the possibility of bringing it about, which probably nothing but some similar instrumentality could have effected. A system of screw-threads has been established, which is now very extensively used, and is being adopted by more railroad companies each year. The number of railroads now adopting the standard axle seems to increase in proportion to the square of the number of years since it was recommended by both the Car-Builders' and Master Mechanics' Association. The standard journal-bearing, journal-box and pedestal will, in all probability, be put into such definite form this year as to insure their rapid introduction hereafter. With uniform patterns once established for these parts, the adoption of a standard truck will be comparatively easy. Some general dimensions for draw-bars were recommended two years ago, and the subject of uniform brake-shoes and coupling-links will come up for consideration this year. Action intended to bring about the location of brake wheels in the same position on all freight cars has been taken, and steps proposed to make running boards on car roofs and the coupling-gear of cars more safe for trainmen, and thus diminish the lamentable loss of life and injury to that class of employés. Few persons, probably, realize the difficulty of bringing about agreement among large numbers of men scattered all over the country. It takes much more time than most persons who have never tried to bring it about think it should. The propensity to dissent and the general wrong-headedness of a considerable proportion of the human race are so great, that to secure unanimity of action it is necessary to wait until the ardor of prejudice and the vanity of opinions have time to cool and dissipate themselves. It must be remembered, too, that to adopt standards prematurely is as bad, or worse, than not to adopt them at all. Diversity has the merit that it gives the fittest thing a chance to survive. Therefore, before it is wise to adopt a standard it is best to wait until it is quite certain that we are able to select, if not the best possible thing, at least a very good one. For these reasons the work of the car-builders has advanced slowly.

Still admitting all that the Car-Builders' Association has done, and all the difficulties which stand in the way of doing more, the verdict, we think, of any impartial observer must be that it has fallen lamentably short of fulfilling what its opportunities would enable it to accomplish. The last issue of Poor's Manual gives the number of cars owned by the railroad companies in this country at nearly 500,000. Since the time the data for these figures were obtained, there has probably been an increase of 10 per cent., so that now the number must be at least 550,000. Estimating these roughly at $300 each, we have a total of $165,000,000 as the value of this property in the whole country. The question may then be put: Does the Car-Builders' Association in any sense represent the interest which its owners have in this property? which leads to the observation that there are two distinct theories of the objects of the Association, the existence of both of which was indicated during the discussion at the last meeting, of which we have given an abstract above. One of these is that the organization is primarily for the benefit of the car-builders who are members, and that the interests of the owners of the cars is a secondary object. In other words, it is a club in which the members exchange information for their own advantage, and seek information which will be of value to them in the performance of their duties, and thus promote their welfare by increasing their knowledge and skill.

The other theory is that the main object of the Association is to improve the construction of cars, and to advance the interests of their owners. The one theory contemplates the improvement of cars, the other the improvement of car-builders. These theories, it is true, may both prevail at the same time, and as a matter of fact, if properly understood, both interests are identical. While this, as an abstract question, may be true, as a matter of fact, in questions of the administration of their interests, what the owners of the cars would, and practically do, say to the car-builders is, You do not understand our interests as well as we do ourselves, and if we are to be governed by the action of your Association we should be represented there *somewhat in proportion to our interests.* As car-builders you are very excellent men, and doubtless understand your business very well, but we are not willing to intrust our $165,000,000 of property in your hands unless we can have some voice and exercise our due share of influence over your deliberations, and if we do send representatives the choice of them must be left to us.

It is quite singular that so much opposition was manifested to the admission of men who are not car-builders to the deliberations of the Association, when, as a matter of fact, for years past such persons have taken part in the meetings for the discussion of the "rules governing the condition of, and repairs to, freight cars for the interchange of traffic." The call for the meeting to revise them this year was sent to all the railroads in the United States and Canada, and they are requested "to send an authorized representative," and nothing at all is said about his being a car-builder, or, so to speak, a layman. It is true the discussion of these rules does not take place in one of the regular meetings of the Association, but that they are practically regarded as part of its proceedings is indicated by the fact that the minutes of the former are published with the annual report of the convention.

If we compare the status of the Eastern and Western Railroad Associations with that of the Car-Builders' Association, a singular contrast will be observed. The former associations are organized to protect the interests of railroads in matters pertaining to patents. These companies are domiciled in comfortable and expensive rooms; they have officers who are paid liberal salaries, and who apparently are not limited in their expenditures for the furtherance of the purposes of their respective organizations. If we turn

now to the report of the Treasurer of the Car-Builders' Association, we find that, excepting the account for the rooms in New York, which are not properly a part of the Association, the total receipts last year were $330, and the expenses $358.75. Probably the receipts and expenses of the Western Railroad Association alone are at least one hundred times as great. Now, why is it that railroad companies so willingly and so liberally provide money for the one purpose and give none at all for the other? There are probably a number of reasons. Short-sighted human nature has this weakness, that it pays tangible amounts of money very unwillingly for intangible property in ideas. It also has this other singular blindness, that it will, with great alacrity, waste intangible amounts of money in the purchase of tangible property, provided it is not apparent how the money is wasted. When a railroad company uses a patented idea, the inventor's bill and the sum demanded are very real things, whereas the inventor's property, which is equivalent, appears a very unreal thing. In the *Railroad Gazette* of July 31, 1875, it was shown that the use of the antiquated and imperfect form of rail section then in use on the Baltimore & Ohio Railroad would result in a loss of $300,000 in relaying the whole line of that road. This loss the officers of that company were then willing to pay without a murmur, whereas a fee of $300 for designing a more perfect section, which any one familiar with the subject could have done, would doubtless have been regarded as an outrageous overcharge.

Nearly all people resist the tax-gatherer, but pay the additional cost of the cigars they smoke, the wine they drink or the iron and steel they consume, which is due to the duty imposed, without complaint. The reluctance of parting with tangible money for what is intangible, and the indifference shown in the loss of intangible sums paid for tangible things, is doubtless one of the reasons for the difference in the status of the association referred to.

The work which the Car-Builders' Association proposes to do appears, doubtless, to many railroad managers very insubstantial and vague. A man who has never attempted to screw a nut with ten threads to an inch on a bolt with twelve is not so likely to realize the importance of a standard system of screw threads as one who has tried to accomplish that feat, and possibly has been provoked to profanity thereby. There are a thousand, and probably more things, which an experienced car-builder could explain to a representative of a railroad company who is not a car-builder, which otherwise the latter would not understand. By having persons in the Association who represent the management of the different roads, it would bring that department and the practical car-builders together, and probably both would thus be very much enlightened. Once let the managers feel that they have a voice in conducting the affairs of the car-builders' deliberations, and let them realize the practical importance of their work, and show that it can be done, and there will be no difficulty in getting all the money needed to conduct its affairs on a very liberal scale. If, however, the members adopt the theory that the Association is intended chiefly to advance the interests of car-builders and not that of car-owners, there is not much hope that its sphere of usefulness will be very much widened.

THE GROWTH OF POPULATION EAST AND WEST.

The growth of this country has been and is so rapid that no calculation concerning means for supplying its wants, especially in the way of transportation, can be adequate which does not take this growth into account; and for many purposes, and for none more than the provision of new railroads, calculations of the probable increase of population and production within a given time are of fundamental importance. Success and failure depend upon the accuracy with which they are made. We have been so accustomed to constant and rapid growth that the mistakes made are usually by over-estimating it; scarcely ever by not allowing for it. Anything which checks the rate of growth usually causes disaster to some important enterprises, whether this check be by some bad fortune, or by the simple filling-up of a country whose lands are at last nearly all occupied. The merchants and the railroads of the West and other growing sections of the country expect and provide for not simply a continuance of good business, but its enlargement. A part of their yearly work is the provision of enlarged facilities. Of course, if when the facilities are provided the larger business does not come, or does not come in the measure expected, then disaster ensues.

For those cities and transportation routes which serve the whole country, or a very large part of it, a general knowledge of the progress of the country as a whole suffices. New York, Boston and Baltimore and the trunk lines leading thence west and southwest may be said to draw their support from the whole country; but as soon as we go a little further west or south, this general knowledge does not suffice. We must know the rate of growth of the district from which each railroad or special industry is supported. A Chicago merchant profits scarcely at all by ever so great an increase in the farm products of Ohio, Michigan or Indiana; St. Louis and Cincinnati little by the growth of Minnesota and Dakota; the Wabash not much by growth in the country north of the latitude of Chicago; the Chicago & Northwestern little by growth south of that latitude; the Ohio & Mississippi much, and the Michigan Central less, by growth in Kansas, and so on.

It will then be worth the while of all interested in railroad traffic, and especially of those engaged in new railroad enterprises, to study the growth of population, as shown by the census of 1880, in the different states and sections To aid in this we make some comparisons of the states north of the Potomac and Ohio and the thirty-sixth parallel, as far west as Kansas and Nebraska.

There is probably a general impression that not only is the growth of population most rapid in the Western states, but that it is there chiefly, and there is further a tendency to count among the rapidly growing Western states those which were such when the generation now controlling industrial enterprises were young. Very many count Ohio and Michigan, and most consider Indiana and Illinois as "Western," and as all growing at a rate unknown further east.

Now, from 1870 to 1880 the increase in population of the whole United States was 30 per cent. The Western states which had an increase at a rate greater or less than this average of 30 per cent. were:

Above.	Per cent.	*Below.*	Per cent.
Iowa	36.1	Illinois	21.2
Kansas	173.0	Indiana	17.7
Michigan	38.2	Missouri	26.0
Minnesota	77.6	Ohio	20.0
Nebraska	267.8	Wisconsin	24.7

It appears then that within the bounds we have marked, from the west line of Pennsylvania to the east line of Dakota and Colorado, just as many of the states had less than the average rate of increase as had more than that average. The five with the smaller percentage of increase were the older states, though not all as old as Michigan. Four of the other five are comparatively new ones. If we distribute these geographically, five west and five east of the Mississippi, the amounts and percentages of their increases appear as follows:

Cis-Mississippi:	Increase.	P. c.	*Trans-Mississippi:*	Increase.	P. c.
Michigan	452,274	38.2	Minnesota	341,100	77.6
Ohio	532,979	20.0	Iowa	430,600	36.0
Illinois	538,878	21.2	Missouri	447,509	26.0
Indiana	297,725	17.7	Kansas	631,567	173.1
Wisconsin	260,810	24.7	Nebraska	329,440	207.8
Total	2,082,666		Total	2,180,216	
Total, 1870	9,124,517		Total, 1870	3,842,413	
Increase, p c	22.8		Increase, p c	56.7	

The easterly group, which until recently were the new states to which emigration was chiefly directed, have thus increased nearly as much in number as the westerly group, which latter occupy a considerably larger area, though doubtless they have not so much cultivable land, a large part of Minnesota being forest, a considerable part of Missouri (most of Southeastern Missouri) hilly, wooded and barren, and as much as a third of Nebraska and Kansas being suitable only for grazing, though on the other hand Iowa has a larger proportion of cultivable land than any other state, and a larger amount than any other with the possible exception of Texas, which is four times as large.

But the *percentage* of increase is much the largest in the trans-Mississippi states, being 56.7 per cent. for the whole group, against 22.8 for the easterly group. But it is well to remember that the absolute increase of population in Michigan, Ohio and Illinois, from 1870 to 1880, was larger than in any Northwestern state west of the Mississippi except Kansas, and that the group of five comparatively old states had substantially the same increase of population as the five new Western ones. Two of the latter, however, Missouri and Iowa, are much older than the other three—and especially Missouri—but two-fifths of the increase of population in these five states was in these two. Dakota, whose percentage of increase was 853, added but 121,000 to its population in the ten years; and if it were added to the western group of five it would make but little difference, its growth having but just begun in the last decade.

Now if we come east of Ohio, to the thickly peopled Middle States (with which we count New York to Maryland, inclusive), we find that these five states, with a much smaller area than either of the two western groups, had an increase of 1,862,059 from 1870 to 1880, against 2,082,666 in the group next west. The percentage of this increase, however, is but 19.2 per cent., against 22.8 in the adjoining group on the west and 56.7 in the trans-Mississippi group. Per square mile of area the increase was largest in the Middle States.

When we go back to New England we reach states much smaller than those of the other three groups. The six together have an area less than that of Missouri and little more than that of Iowa, with not half as much cultivable land as either. They have an aggregate increase of 522,514, or 15 per cent., in population from 1870 to 1880, which is nearly as large in amount as the increase in Ohio or Illinois, but a smaller percentage than in any of the other three groups we have named. Altogether they had in 1880 a population of 4,010,438 inhabitants, which is less than Pennsylvania's, and nearly a third more than that of Illinois or Ohio. But the increase in New England has been confined chiefly to the three southerly and very small states of Massachusetts, Rhode Island and Connecticut. In these, all great manufacturing states, with an aggregate area just about one-fourth that of Illinois, the increase in population was 470,065, or 21.2 per cent., the same as in Illinois, and greater than the percentage of increase in the Middle States, in Ohio or Indiana.

Now, the rate of increase, taking all the states north of the Potomac and Ohio east of the Mississippi, with the exception of the three stationary northern New England States, has not varied very greatly in the three different groups. The western group, which has by far the largest amount of cultivable land, has grown but little faster than the three southern New England States or Pennsylvania, and not quite so fast as New Jersey. Illinois largely increased its land under culivation in the decade, and Michigan and Wisconsin considerably, which the states further east did not do, but in this group just east of the Mississippi, as well as in the Eastern States, the increase in agricultural population was comparatively small, and will be very small hereafter. This is shown sufficiently by the census returns by townships. In Northern Illinois quite commonly townships which are exclusively agricultural, that is, those that contain no villages, have as small a population as in 1870 or even 1860, and often a smaller one. All these states increase gradually the area under cultivation, but they do it without additional laboring force, and the increase of their population may be said to be devoted entirely to other industries than agriculture. They are fast becoming great manufacturing states, supplying first the wants of their own population that formerly obtained its supplies from the East, and then those of the trans-Mississippi states, now almost exclusively agricultural. But it appears that as soon as the agricultural land of a state is once fully occupied (and long before it is fully utilized) its growth in population, though perhaps as large in amount as before, or even larger, sinks to a percentage about the same as that of the old Eastern States. This period comes much sooner than is generally supposed: it does not take very long to convert prairie land into farms, and when once the land is in farmers' hands, though it may be brought under cultivation quite gradually, there is at once a great check if not a total arrest of the growth of agricultural population. Thenceforward the growth is almost entirely in the towns, and more or less rapid as the situation is more or less favorable for trade and manufactures, but on the average not much faster than in the older manufacturing states. In absolute numbers the increase of population was larger in New York and Pennsylvania from 1870 to 1880 than in any other state except Texas, whose area is six times as great as that of either.

April Earnings.

April earnings are reported in our table for 51 railroads, with this year 33,341 miles of road, which is 15.6 per cent. more than they worked in May last year, and about 35 per cent. of the total now in operation in the United States. With this increase of 15.6 per cent. in mileage their aggregate earnings were $19,981,519, which is 19.1 per cent. more than last year, and their average earnings per mile of road *increased* from $582 to $599, or 2.9 per cent. This increase is especially satisfactory because earnings were very large last year, and further because much of the additional road is new and undeveloped. Last year our table for April (covering 56 roads, 41 of which are in this year's table), showed an increase of no less than 14.3 per cent. over 1879 in average earnings per mile.

Only five of the 51 roads show any decrease in total earnings this year, and only eight have smaller earnings per mile. The largest rates of increase are: 49.6

per cent. in earnings per mile on the Denver & Rio Grande, 67.1 on the Des Moines and Fort Dodge, 67 on the Minneapolis & St. Louis, and 44.8 on the Paducah & Elizabethtown, and there are four others on which the increase was more than 30 per cent., and eleven on which it was more than 25 per cent. The only very large decrease was 61.2 per cent. on the St. Paul & Sioux City, a large part of which was blockaded with snow most of the month. The decrease per mile and the small increases are chiefly on Northwestern roads. The large increases were pretty well distributed. The unusually large number of 14 Southern roads report, all but the Houston & Texas Central with larger earnings per mile, and many with very large increases, the lightest being on the Chesapeake & Ohio, the Louisville & Nashville and the Texas & Pacific.

Among the roads reporting are two which carry through traffic at trunk-line rates which were not opened for this traffic until after the beginning of last year, but were in full operation in April of both years. Their success in attracting this traffic is a matter of interest to many besides those concerned in those roads, and especially to those who contemplate the construction of other lines for through traffic. Of these, the Indianapolis, Decatur & Springfield earned 29.4 per cent more this April than last, but yet had but $269 per mile of road, while the Lake Erie & Western earned $272 per mile and 24.4 per cent. more than last year. These are very small earnings, and it may be concluded that neither as yet has attracted any considerable amount of the through traffic.

The Wabash, St. Louis & Pacific, which worked 2,300 miles of railroad in April last year and 2,479 this year, has slightly smaller earnings this year.

Earnings per mile in April for five consecutive years have been as follows on several roads:

	1876.	1877.	1878.	1879.	1880.	1881.
Ala. Gt. So.	.....	.....	.....	$115	$156	$201
Burl., C. R. & No.	$320	$197	$272	231	288	327
Cairo & St. Louis.	116	133	131	133	217	241
Central Pacific.	1,085	867	740	645	577	688
Ches. & Ohio	.....	.....	.....	374	510	523
Chic. & Alton.	560	501	496	495	646	653
Chic. & E. Ill.	.....	.....	.....	384	526	598
Ch., Mil. & St. P.	465	367	555	383	369	331
Chic. & N. W.	.....	435	604	523	566	525
Cleve., Mt. V. & Del.	192	201	207	200	231	246
Flint & P. M.	.....	.....	.....	365	436	530
Hannibal & St Jo.	466	623	468	532	708	644
Hous. & Tex. Cen.	.....	.....	.....	316	480	460
Ill. Cent., in Ill.	569	465	476	443	472	525
Ill. Cent., in Iowa.	318	253	316	284	308	374
Ind., Bloom. & W.	.....	.....	.....	425	426	489
Int. & Gt. North.	173	154	154	156	210	293
Louisville & Nash.	350	392	392	407	435	461
Mem., Pad. & No.	148	107	123	104	123	168
Minn. & St. L	.....	.....	.....	271	185	309
Mobile & Ohio	201	184	219	232	280	320
Nash., Chat. & St L.	.....	.....	.....	368	340	392
Northern Cen.	1,009	1,008	848	1,009	1,188	1,495
North. Pacific	.....	.....	.....	180	258	285
Paducah & Eliz.	.....	138	124	129	156	227
Pennsylvania.	.....	1,366	1,461	1,553	1,863	1,976
St. L., A. & T. H. Main Line	.....	.....	.....	360	556	707
St. L., A. & T. H. Belleville Line.	537	515	511	582	662	801
St. L., Iron Mt. & S.	400	420	413	465	596	781
St. L. & San Fran.	.....	.....	.....	255	330	422
St. P., Minn. & Man	.....	.....	.....	429	508	492
Scioto Valley	.....	.....	208	213	205	264
Texas & Pacific	292	300	301	234	392	425

Of the 33 roads whose earnings per mile in April are given for the last three years, only four had larger ones in 1880, and only *one* (the Chicago, Milwaukee & St. Paul), larger in 1879 than this year. Three out of 17, in 1876, two out of 19, in 1877, and three out of 21, in 1878, had larger April earnings in those years than in 1881. Thus, this year shows a very decided advantage over all the others. Of the 17 whose earnings are given for all of the six years, no less than twelve—the Burlington, Cedar Rapids & Northern, the Cairo & St. Louis, the Cleveland, Mt. Vernon & Delaware, the Iowa lines of the Illinois Central, the International & Great Northern, the Louisville & Nashville, the Memphis, Paducah & Northern, the Mobile & Ohio, the Northern Central, the Belleville Line, the Iron Mountain, and the Texas & Pacific—had larger April earnings this year than in any other of the six.

The roads with the smallest and largest earnings per mile this year are:

Smallest:		*Largest:*	
St. P. & Sioux City	$106	Pennsylvania	$1,976
Mem., Pad. & Nor	168	Phila. & Reading	1,682
Mil., L. S. & West	177	Northern Cen	1,495
Ala. Gt. So.	201	Cincinnati & Spring.	985
Peoria, Dec. & Ev.	208	Cleve., Col., Cin. & Ind.	936

For the four months ending with April our table has reports from 52 roads with this year 34,058 miles of road. This is 16½ per cent. more than they worked last year, and with it they earned 12.4 per cent. more money, their average earnings per mile of road having *decreased* from $2,162 to $2,086, or 3½ per cent. Eleven of the 52 roads have a decrease in total earnings, and 15 a decrease in earnings per mile. Five of the eleven roads that have a decrease in total earnings had an increase in mileage this year; several, but not all, of these suffered greatly by the snow blockades. Among the more interesting reports may be noted that of the Atlantic, Mississippi & Ohio (now Norfolk & Western), which earned $1,606 per mile in the four months, or about one-fifth less than the average of the roads reporting, and the Chicago & Grand Trunk, which earned $1,369 per mile, and 28.3 per cent. more than last year. (It was not open through the whole of last year.) Of the roads with large trunk-line traffic the greatest rate of gain—16.5 per cent., against 3.3 on the Grand Trunk, 10.9 on the Great Western, 8.3 on the Cincinnati & Springfield, 1.3 on the Cleveland, Columbus, Cincinnati & Indianapolis, 6.8 on the Pennsylvania, etc.

Doubtless net earnings have not nearly kept up with gross earnings, but considering the weather and the exceptional profits of last year the results are generally satisfactory.

The Investigation of British Railroad Rates.

The evidence given before the British Parliamentary Committee with regard to rates is continued, and is interesting here, first as showing that the discriminations in rates complained of are, generally, precisely the same in nature as those that are brought forward here, and caused by the same inevitable laws of trade. They are further interesting as giving numerous definite statements of rates actually charged in Great Britain, which, heretofore, it has not been easy to ascertain. Below we have summarized the testimony of two weeks before this committee, together with explanations and some comments.

At a session of the committee Monday, May 9, the President of the Iron Mongers' Association complained that the classification book of the railroads was practically a sealed book to the public. On application a price would be given at which any article would be sent, but the class would not be named, and the classification book would not be shown. He had never been allowed to have one in his hands. This is very different from American practice. Our roads print the whole classification on the rate sheets which are given to all shippers as standard quotations. The witness wanted the classification and rates published. He also said that the rates for quantities under 500 pounds were exorbitant, which enabled firms of forwarders to make a profitable business of collecting small parcels and shipping them in quantities at the rates for large quantities. This is the almost universal practice in Germany, where the "package goods" rate is very much higher than the rates for whole and half car-loads.

A manufacturer of pig iron in Staffordshire said that the pig iron manufacture in that county had been nearly destroyed by the excessive rates charged for carrying raw materials. He claimed that the charges were 7s. 6d. ($1.62) per ton above the legal maximum, and 11s. 7d. ($2.81) above what he believed to be a reasonable charge. He wished the Railway Commission to be continued with an officer of the Board of Trade to take up the complaints of individuals, whom the railroads now laugh to scorn. There were 110 blast furnaces in South Staffordshire in 1862 and 104 in 1872, but only 41 in 1881.

An Aberdeen witness, at a later session, testified that a railroad company had refused to show him a rate book at a station, which a recent law directs to be done on application. A shipper at Cork, Ireland, had also been refused the rate book, and that even after he had sent the traffic manager an act of Parliament concerning this. He complained that the rate on butter from Tralee, *via* Dublin, to Liverpool, 305 miles, was 30s. 10d. per ton (33⅓ cents per 100 lbs.), while from Tralee to Cork, 83 miles, the charge was 22s. 6d. per ton (24½ cents per 100 lbs.) From Limerick to Cork, 62 miles, the charge is 17s. 6d. (19 cents per 100 lbs.), and from Limerick to Liverpool, 292 miles, 29s. 2d. per ton (31¼ cents per 100 lbs.). It is not easy to see what these comparisons are worth. From Limerick and Dublin to Liverpool the transportation is by sea. The rates do not seem high for such an article. In Ireland it was thought that rates were made to favor shipments from Dublin and against ports in the southern part of the island. Burton (English) beer was charged 6s. 6d. per ton from Dublin to Cork (7 cents per 100 lbs.), while beer manufactured in Dublin was charged 15s. 6d. per ton (17 cents per 100 lbs.) for the same distance. English manufacturers got the advantage of the English classification, which put many articles in a lower class than that to which they belonged by the Irish classification. Porter is in the Irish third class but in the English first class. (In these classifications the first is the lowest class, or that on which rates are lowest.) Hides and skins are fourth class in Ireland and first class in England, and the Irish tanners suffer thereby. Dried fish is third class in Ireland and first in England, and this works against the Irish fisheries. Flax is fourth class in Ireland and first in England. The Great Southern Railway charges 12s. 6d. per ton (13⅔ cents per 100 lbs.) for sugar, ale, iron, etc., from Cork to Drumoleigh, 45 miles; while from Cork to Skibbereen, 53 miles, the charge is 10s. 6d. per ton (11⅔ cents per 100 lbs.). Where there is competition, rates are reasonable, where there is no competition rates are much higher. The manufacture of peat had been given up by several persons because of the heavy charges by rail. Cattle are frequently driven from one station to another because a car could not be had, and cattle shipped to Cork were often delayed until those destined for Dublin were provided for. Rates were given for cattle and sheep per "truck" (a small car), as follows: By Great Southern & Western for 64 to 66 miles, 36s. 6d. per truck and 18s. 6d. per half truck; Waterford to Limerick, 45s. per truck and 30s. per half truck. Just how many a truck will hold we cannot say. We believe the cattle are put in lengthwise, two rows to a truck.

In Ireland there are 2,500 miles of railroad with a capital of £136,000,000 (£54,400 or $265,000 per mile). To manage these there were 270 directors, 37 secretaries, 20 managers, 36 solicitors, 40 auditors, and 30 engineers. The Great Western, of England, has nearly as many miles of road (2,147), but only half the capital (£68,000,000), and is managed by a board of 16 directors, one general manager, and one secretary, with other officers.

This witness thought that a traffic in peat, hay and straw might be developed by cheaper rates, and thought rates ought to be equalized, but did not wish to reduce the profits of the railroads. (The Irish roads make a very poor return on the capital invested in them). He said that there had been a great advance in the rates on Irish railroads since 1867. He thought it would be a great blessing if all the railroads in Ireland were under one management, and he favored their purchase by the state.

On Monday of the following week the Staffordshire iron-master who testified the week before said that the iron production of South Staffordshire fell from 2,500,000 tons in 1855 to 105,000 in 1879. He said the rates were unduly high and higher than in Belgium, Germany and America, but he did not say what the rates were. What was wanted, he said, was a maximum rate of a halfpenny per ton per mile (0.88 cent per ton of 2,000 lbs. per mile), with a terminal charge of two pence, and a minimum of six miles for the carriage of quantities of 100 to 150 tons. The present maximum rate of the Great Western is three halfpence, and of the Stow Valley road one penny.

Another South Staffordshire iron-master testified that 40 years ago the rate for minerals from Wednesfield Heath to Liverpool was 6s. 6d. and 7s. 6d. per ton, station to station, while now it is 11s. from Dudley, delivered alongside ships. By canal the rate is about the same, with a saving of 1s. 6d. for delivery. The railroad and canal had been amalgamated and the rates on both had been gradually advanced. Sea competition kept the rates lower in Middlesborough and South Wales, which gave them an advantage over Staffordshire. He thought it would be well to give trade associations a right to prosecute complaints before the Railway Commission. Individuals were loath to undertake it. He thought the roads should be compelled to give six months' notice of an advance in rates. They can raise them now without notice. He also thought there should be equal rates per mile in all directions.

The President of the Wolverhampton Chamber of Commerce said the rate from Wolverhampton to Liverpool, 84 miles, is 10s. per ton (equal to 2.59 cents per ton of 2,000 pounds per mile); from Middlesborough, 155 miles, it is 8s. 9d. (0.607 cents per ton per mile).

The director of the transport service of the War Department complained that various charges were made for loading and unloading military stores when it was not done by the government. The law allowed a uniform charge of 2d per ton per mile, the military loading and unloading. He suggested a fixed scale of terminal charges.

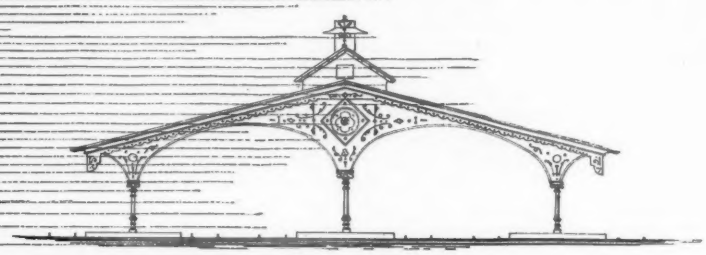
A Scotch cattle-dealer complained of high rates on live cattle and dead meat from Scotland to London. From Thurso the charge is £1 per bullock and £12 9s. per truck, and for dead meat 27s. per carcass. From Inverness it is 24s. 2d. per head and 77s. 6d. per ton for meat (= 83 cents per 100 lbs.); from Aberdeen 24s. a head is the charge by rail and 16s. by steamboat, while from Dundee 24s. per head is charged for the live animal and 17s. for the carcass.

A pretty heavy steer is now carried from Chicago to New York (nearly twice as far) for $3.75; but this is only half what the companies desire to charge, and do charge when they can. The Scotch cattle-dealer had no other reason to give why the rate should be lower than that it would promote the traffic.

A South Staffordshire manufacturer of tin plate said that this business had increased but 30 per cent. there in the last ten years, while in South Wales it had increased 150 per cent. The latter had an advantage in its low rates to Liverpool and London. From Swansea to London, 216 miles, the rate is 17s. 6d. per ton (19 cents per 100 lbs. and 1.76 cents per ton of 2,000 lbs. per mile), while from Coakley, South Staffordshire, to London, 148 miles, the charge is the same (2.58 cents per ton per mile). From Swansea to Liverpool, 187 miles, the charge is 12s. 6d.; from Coakley to Liverpool, 108 miles, also 12s. 6d. From Coakley to Southampton, 158 miles, the rate is 21s. 6d. per ton (= 23¾ cents per 100 lbs. and 3 cents per ton per mile).

The American reader will bear in mind that Swansea is a seaport and that rail rates thence to other seaports are governed almost entirely by the competition of the steamers, regular lines of which run from Swansea to London and Liverpool.

A grower of fruit and hops complained of excessive rates on the Southeastern Railway to London. From Canterbury to London, 70 miles, 39s. per ton were charged for hops (= 42⅛ cents per 100 lbs. = 12.1 cents per ton per mile); from Dartford, 17 miles, 22s. 9d. (= 24⅓ cents per 100 lbs. = 29 cents per ton per mile); from Gravesend, 24 miles, 26s. per ton; from Eltham, 9 miles, and from Beckenham, 10 miles, 16s. 3d. per ton. Yet from London to Manchester, 189 miles, the rate was but 40 s., and from London to Liverpool, 239 miles, 39s.; from Dieppe (France) by way of New Haven to



END ELEVATION OF CAR SHEDS.

Scale.

5 10 15 20 25 30 35 40ft.

A. Baggage Master's Private
B " "
C. Store Closet.
D. Kitchen.
E. Dining Room.
F. Gents Wash Room.
G. Pullman Ticket Office.
H. Ladies Closets.
I. Ladies Retiring
J. Gents Closets
K. News Room.

W.W. BOYINGTON ARCHITECT CHICAGO

CHICAGO AND NORTH-WESTERN RAIL PAS

SIDEWALK.

ROADWAY

KINZIE STREET.

EXPRESS BUILDING

A. B. C. D. E. F. G. H. I.

GENERAL PASSENGER ROOM.

TICKET

WELLS STREET.

K.

Scale 10 20 30 40 50 60 70 80 Ft.

RAIL PASSENGER STATION CHICAGO ILLINOIS — COR. KINZIE AND WELLS STS.

London, 120 miles, the charge was 17s. 6d., and from Boulogne *via* the channel and this same Southeastern Railway it is only 19s. 7d.

These rates on hops for short distances are much the highest that have been brought out by the investigation as yet, but their reasonableness depends much on the form in which the hops are taken, whether loosely bagged, in which case they would take a great deal of room, or pressed in bales, and the testimony says nothing on this point.

Crop Prospects.

Crop prospects have been much discussed during the past week. Crude estimates from Minnesota, made by the county assessors, indicate a slightly smaller acreage of spring wheat that last year, due to the substitution of other crops for wheat in some of the southern and southeastern counties, which have heretofore been the largest producers, and to the inability of the farmers in the western counties, where there was a large immigration last year, to cultivate as much as they intended this year, owing to the very early winter and the very late spring. But the grain sown has generally made a very good start, and looks as well as at this time last year. There is some increase of acreage in the Red River valley and southwestern counties. In Iowa reports from all parts of the state generally agree that there is somewhat less wheat sown than last year, the exception being in the northwestern counties, which had a large increase of population last year but are still very thinly peopled, and here the report is that fewer acres are cultivated in proportion to population, owing to the very late spring. But this late spring has apparently done no other damage than to shorten the farmers' working time; since the snow went off there has been scarcely a frost, and the grain sown and planted has come forward finely. In the last week of May, however, much corn remained to be planted, and in case of an early frost this may suffer. In the average season, however, corn planted by the first of June has time to ripen before frost. Somewhat more corn and much more oats than last year are cultivated in Iowa, and there is a vast increase in flax, which can be sown when it is too late to put in other crops. Flax has not hitherto made any figure among products transported. Iowa stands next to Illinois in the importance of its agricultural produce, turning out vast quantities of corn, hogs and cattle, as well as wheat. The northeastern part of the state has recently been abandoning wheat in favor of grass and dairy products.

From Missouri the news is not so definite; winter wheat suffered during the winter, and there is some complaint of injury by insects since; but there and further east the weather for growing has been generally favorable so far. The crop, however, cannot be as large as last year's exceptionally large one. Michigan, which suffered most from the winter, has had favorable weather since, and recent reports say it promises now to yield three-fourths of an average crop. Last year's crop was much above the average.

Reports from Nebraska speak of a very large increase in wheat production there over last year's crops; but last year was an exceptionally bad one for wheat in Nebraska, as in Kansas; for 1880 the average yield per acre is reported as 8.8 bushels per acre in Nebraska, against 11.3 in 1879; and in Kansas 10 bushels per acre, against 110 in 1879. Nebraska has been growing rapidly and a fair crop (and the prospect is good now for a full one) will give it a much larger amount than last year.

Everywhere corn planting has been from two to four weeks later than usual, and almost everywhere the spring has been exceptionably favorable to rapid growth, so that what has been put into the ground has come forward with great rapidity, and in many, perhaps most, districts small grains are reported to be as far advanced as last year, when, though the spring opened very much earlier, there were afterwards many weeks of cold dry weather, which hindered the growth of vegetation. Grass is said to be more advanced than last year, and this is in many parts of the West (and probably in most parts of the East) the most important crop, though there is little advantage in having the hay mature early.

In all considerations of crop prospects the relative importance of the several states should be borne in mind. There is a tendency to exaggerate the importance of the newer states, which neither in acreage nor in average yield per acre equal some of the older ones. Minnesota, Nebraska and Kansas together, for instance, though they had 837,000 more acres, produced 25,500,000 less bushels of wheat in 1879 than Indiana and Illinois together, and in 1880, with 633,000 more acres they produced 21,300,000 less bushels. In 1879 they produced less, and in 1880 but very little more than Ohio and Michigan together. Of course the condition of the crops in each state is of prime importance to the people and to the railroad lines of those states; but to the country and to the railroad system at large failure or success in the wheat in Illinois more than twice as important as failure or success in Kansas, while in the more important corn crop the difference is still greater. Taking five states east and five west of the Mississippi, their production of grain of all kinds in 1880 was, in bushels:

Cis-Mississippi:	Bushels.	*Trans-Mississippi:*	Bushels.
Ohio	187,757,000	Minnesota	76,691,000
Michigan	77,709,000	Iowa	285,832,700
Indiana	102,767,900	Missouri	160,734,000
Illinois	369,850,800	Kansas	104,214,900
Wisconsin	93,429,700	Nebraska	77,267,300

Thus, Illinois produced nearly 50 percent. more grain than Minnesota, Nebraska and Kansas together, and Iowa somewhat more than these three states, and Ohio alone more than Kansas and Nebraska, or Kansas and Minnesota, together. The five states this side of the Mississippi produced 891,514,000 bushels, against 704,738,000 in the five west of the Mississippi, though Iowa, next to Illinois, is the greatest grain-growing state. More than two-fifths of the aggregate production of the ten states was in the two states of Illinois and Iowa, which, out of a total production of 2,424,000,000 bushels of grain in the United States in 1880, produced 656,000,000 bushels, or 27 per cent., equal to 139 bushels per inhabitant—to 120 bushels in Illinois, where the people are largely engaged in trade and manufactures, and to 175 in Iowa, against 94½ in Minnesota, 105 in Kansas and 171 in Nebraska—the last two with very few large towns and almost exclusively agricultural.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Kansas City, Ft. Scott & Gulf.—The branch of this road to Springfield, Mo., has been completed by laying track from Golden City, Mo., east by south to Greenfield, 15 miles.

Texas & Pacific.—Extended from Colorado City, Tex., westward to Big Springs, 30 miles.

International & Great Northern.—Extended from San Antonio, Tex., westward 30 miles.

Olean, Bradford & Warren.—Extended from Bradford, Pa., southwest 6 miles. Gauge, 6 feet.

Detroit, Butler & St. Louis.—Completed by laying track from Adrian, Mich., southwest to Morenci, 13 miles.

This is a total of 94 miles of new railroad, making 1,480 miles thus far this year, against 1,519 miles reported at the corresponding time in 1880, 619 miles in 1879, 407 miles in 1878 and 461 miles in 1877.

THE GROWTH OF GRAIN PRODUCTION DURING THE LAST DECADE is reported by the census bureau, which furnishes the following statement, giving the results of the first count of the cereal crops of 1879–80 in comparison with those of 1869–70:

	Acres.	Bush., 1880.	Bush., 1870.	Increase.	P. c.
Buckwheat	851,304	11,851,738	9,821,721	2,030,017	20.7
Barley	2,005,466	44,149,479	29,761,305	14,388,174	48.4
Oats	16,150,612	407,970,712	282,107,157	125,863,555	44 6
Wheat	35,487,161	459,501,193	287,745,926	171,755,467	59.7
Corn	62,326,852	1,773,106,576	760,944,549	1,012,162,027	133.2
Rye	1,844,321	19,863,632	16,918.795	2,944,837	17.4
Total	118,665,819	2,716,243,230	1,387,299,153	1,329,144,077	90.0

Meanwhile the population of the United States increased from 38,558,371 to 50,152,866, or 30 per cent. Thus the progress in grain production was more than three times as fast as the progress in population, indicating that, on the whole, we have been becoming more and more an agricultural nation. This is contrary to popular belief, and probably the tendency of things after the war until 1873 was to divert population from agriculture to manufactures and other industries; but with the collapse of other industries in 1873 there began a contrary movement, which has been felt in the immense agricultural production of the past four years, which is now reacting on other industries. In 1869 (the census taken in June can only give the crop of the previous year) the average production per inhabitant was 36 bushels of grain of all kinds; in 1879 it was 54 bushels, or just one-half more. The crop was an exceptionally good one in 1879, but this will not account for so large an increase, nor will the somewhat more general use of machinery and the consequent greater effectiveness of each agricultural laborer. Part of it, we believe, must be due to a larger proportion of the population being engaged in grain-growing.

To keep up production on this basis will require an increase of about 80,000,000 in the crop of 1881, and, while immigration is as large as at present, a yearly increase of about 3 per cent. in grain production, and with light immigration, an increase of 2⅝ per cent., which has been the average yearly increase of population from 1870 to 1880. The average yield per acre in 1880 was a little less than 23 bushels of grain of all kinds, and at this rate 3,500,000 acres of new land will have to be brought under cultivation in order to keep up the ratio of production to population. This is about 5,400 square miles, or 150 townships—enough to make seven or eight fairly large counties. The yearly increase in population now is about as much as twice the whole population of Minnesota in 1880, to one-half more than the population of Kansas, and to the whole of the population of Virginia, Georgia, Tennessee, Texas or Iowa; but scattered over the country in proportion to population, it would add but about 45,000 to each of the last-named States. An increase *by immigration* of this number is a large immigration, and usually occurs only in border states.

THE MEXICAN RAILWAY COMPANY has recently issued its report for the last half of 1880, showing a continuance of the progress in earnings which has marked its recent history. The gross earnings were $1,910,720 (in silver), against $1,657,930 in the corresponding half of 1879, the increase thus being $252,790 or 15.3 per cent. There was very little increase in passenger or "pulque" earnings; nineteen-twentieths of the increase was in freight earnings, largely due to the carriage of materials for the new Mexican railroads; the increase in other freight amounted to 3,000 tons. This traffic in railroad supplies has been much larger since the expiration of the period covered by the report; and the directors say that for the first four months of the current year the earnings have been $80,000 more than in the corresponding period of last year, and that, though they have not definite figures as to the sources of these earnings, "there can be no doubt that this large increase has been almost wholly derived" from railroad supplies. We understand that the road receives $28 per ton for carrying rails from Vera Cruz to Mexico, 264 miles; so that the carriage of the materials for a long railroad is a real bonanza for it. The directors, however, seem not very greatly elated by these large additions to their earnings. They say that this traffic must be considered temporary, though the road, when completed, will stimulate other traffic, and that some of the roads projected will, if built, compete with their road. This is very true. The Mexican Central people have agreed to construct a line from the Gulf at Tampico to the City of Mexico, and the Mexican National people are seriously considering a project for a new line from Vera Cruz itself to the city of Mexico, and both, we believe, have given a great deal of weight to the fact that these lines to the gulf would enable them to get their supplies without paying $28 a ton to the Mexican Railway. If not, they will, as soon as communication across Texas to the Rio Grande is established, import by our gulf ports and carry in bond across Texas, and so far as possible lay track from this direction. The admission of materials for the new railroads free of duty was thought likely to make them cost much less there than here; but a rate of $28 per ton for transportation 264 miles just exactly balances the United States duty on steel rails.

The Mexican Railway paid the same dividends for the last as for the first half of 1880, namely, 4 per cent. on the first and second preference shares and ¼ per cent. on the ordinary shares.

A NEW LINE TO CHICAGO, to be constructed in the joint interest of the New York, Lake Erie & Western and the New York, Pennsylvania & Ohio, is announced, to be made by building a line from the latter road at Marion, O., west by north to Chicago, about 260 miles. If built on an air line, this road would be almost directly alongside the Pittsburgh, Fort Wayne & Chicago for all but the first 60 or 70 miles. From New York to Chicago by this line will be 974 miles, namely:

New York, Lake Erie & Western, to Salamanca	413
New York, Penna. & Ohio, to Marion	304
Chicago & Atlantic, to Chicago	257

This is a little longer than by way of Buffalo, but the difference is not important. There are, however, few important towns on the line, and the new section will pass through a country where the railroads are already uncomfortably close together. It is very much like the Baltimore & Ohio's Chicago line, and it would probably command more traffic out of Chicago than that does: at least the Erie now gets a much larger share of shipments out of Chicago than the Baltimore & Ohio does. Probably it could not turn all this traffic over a new road, however, any more than the Grand Trunk could when it got its line to Chicago: a good deal of its Chicago freight still reaches it by way of the Michigan Central at Detroit. The two new lines completed into Chicago of late years together get 18 per cent. of the Chicago shipments under the pool, the Baltimore & Ohio 8, and the Chicago & Grand Trunk 10.

THE SOUTHWESTERN RAILWAY ASSOCIATION will hold a meeting June 14 for the first time for nearly a year. It is the best of all signs for an organization of this kind that it holds no meetings. When everything goes on smoothly there is no occasion to meet, and frequent meetings usually mean many troubles to settle. It has been reported that there are troubles ahead now, but we have no evidence of any unusual difficulties or of questions which cannot be settled by the means which the Association provides. The roads are still suffering from the effects of the passenger war last fall, the large number of unlimited tickets sold then preventing the restoration of rates, though for months all parties have desired their restoration. The Association has been of enormous advantage to its members, and we may be sure that they will not readily permit it to be dissolved.

PROVISION EXPORTS from the United States for the four months ending with April show increases in all items except lard, tallow, and butter. In hog products of all kinds the exports were 238,200 tons, against 235,123 last year. There is an increase of 13 per cent. in the fresh beef exports, which, however, are still very small in comparison with bacon, amounting to 19,860 tons. Butter exports fell off nearly one-fifth, but cheese exports increased 65 per cent. For the twelve months ending with April the exports of dairy products, in tons, were:

	1881.	1880.	Inc. or Dec.	P. c.
Butter	17,819	19,445	D. 1,626	8.4
Cheese	72,780	59,471	I. 13,309	25.7

The growth of cheese exports has been very rapid. Only a few years ago there were scarcely any.

LAKE RATES have advanced during the past week, and for several days have been quoted at 4½ cents a bushel for corn and 5 cents for wheat from Chicago to Buffalo.

Canal rates have hardly changed, and are now given as 4½ for corn and 5 for wheat, the same as lake rates.

Ocean rates have also changed but little and are very low, grain by steam to Liverpool being commonly quoted at 2¼d. per bushel. To other ports, even though no more distant, the rate is often 2d. or 3d. higher. The very large number of steamers to Liverpool makes the supply of grain room to that port greater than the demand, and to transport it thence costs more than the whole ocean rate.

Receipts have not been nearly so large at lake ports as at this time last year, but the supply of vessels has been quite limited notwithstanding.

A BARGE SHIPMENT FROM ST. PAUL is announced, or rather a contract for one. The barges are to take 30,000 bushels of wheat at St. Paul, and the price for delivery at Glasgow is to be 28 cents a bushel. That is not very different from the current cost by rail to Chicago or Milwaukee, and thence by lake, canal and sea. It would seem that when there is any advantage in shipping *via* New Orleans, all

Mississippi River grain markets ought to profit by it, and not St. Louis alone. The costliest part of grain transportation is usually that which brings it to the lake or river market, and to carry by rail from one river market to another seems wasteful.

New Chicago Passenger Station, Chicago & Northwestern Railway.

The new structure built for a general passenger depot and office building of the Chicago & Northwestern Railway in Chicago, at the corner of North Wells and East Kinzie streets, which has just been brought into use, is one of the striking features of that city.

The project for a new passenger depot having been under consideration for several years past, about a year ago orders were given to the architect, Mr. William W. Bayington, to perfect the plans and put the same under contract. The final result is a structure that in its general proportions and architectural style is regarded as without a superior in the country.

The material is red pressed brick and Lake Huron French gray sandstone, treated in the Queen Anne style.

There are two passenger waiting rooms. One, which is termed the platform story, down from the principal streets half a story. The size of this room is 126 ft. by 56 ft. It contains a ticket office and lunch room, gentlemen's and ladies' departments, etc. This floor has also the baggage rooms, 217 ft. by 25 ft., in a side building; also an express building 150 ft. by 15 ft. This is but one story high.

The main and grand gentlemen's and ladies' waiting room is upona level with the main street entrance. It in itself is, without doubt, one of the most complete and commodious passenger rooms yet erected. It is 144 ft. by 60 ft. in the clear. It has been finished in hard wood, void of all gingerbread finery. The walls are painted in oil, the ceilings beautifully frescoed in keeping with the wood work, all of which is in the Eastlake or modern Gothic style. On this floor there is a commodious dining room, kitchen, store room and pantries, lavatories for ladies and gentlemen, a ladies' parlor (a little gem), the main ticket offices and the Pullman ticket office.

From this main floor there are two large flights of hardwood stairs leading to the two stories of offices above, which are finished off in hardwood and now occupied by several departments of the road.

The main platforms and tracks are covered with an iron shed 125 ft. by 400 ft., containing nine tracks. When the trains are all concentrated in this place, the arrival and departure of trains will average one in every ten minutes in the day.

The total cost of the buildings and platforms is $250,000

The Chicago & Northwestern has three separate lines out of Chicago, and originally each of these had its own Chicago station, and until this building was completed, one important station was on the west side of the river. At the new structure, which is very near the business centre of the city (connected with it by a bridge and a tunnel), there will be room to concentrate the whole passenger business.

The Ownership of Railroad Property.

Mr. George Ticknor Curtis, whose reply to Judge Black's letter on the above subject was published lately in a pamphlet as a letter to President Jewett, of the Erie Company and afterward elaborated as an article in the *North American Review*, has still further elaborated his argument in a volume which will soon be published by John Wiley & Sons, under the title of "The Doctrine of Presumed Dedication of Private Property to Public Use in its Application to Railroads." The following account of this forthcoming volume and extracts from it are from the New York *World*:

The treatise seems supplemental to its author's article in the last April number of the *North American Review* on "the ownership of railroad property." It was the object of that article to maintain that the property of railroad corporations, which has been purchased by private funds, has all the attributes of private property; and that, unless the charter of the corporation, or some law of the state which, by fair implication or by express provision, is to be regarded as a part of the contract between the state and the corporation, has reserved to the state a power to regulate the rates of fare and freight, the corporation has the same right to fix its own rates as the owner of any other property has to determine the price for which he will allow the use of his property, and will render his personal services in connection with that use. Mr. Curtis says he cannot dispute the authority, yet he may criticise the opinion of the Federal Supreme Court which ascribes to the legislative power an authority to presume that private property has been clothed with a public interest, whenever the owner of the property uses it in a manner to make it of public consequence, and to affect the community generally; and that from this assumption of a public interest, granted by the owner himself, as a substantive source of legislative power, had been drawn a legislative authority to control the price for the use of the property, and the services rendered in connection with it.

And he reminds his readers that the tribunal of the people once overturned the prior decision of the Dred Scott case. Mr. Curtis states as a singular fact that the doctrine of presumed dedication of private property to public use was first resorted to in a case where the constitution of a state, made long after a certain business had been prosecuted by a private individual with his own means, had declared his warehouse to be a public warehouse, and conferred on the Legislature a power to fix the price at which he was to permit his property to be used by the public.

Proceeding next to discuss elements of "private property" or of "public uses" possessed by railroads, Mr. Curtis adds: "All our railroads which are of any general consequence are the property of private corporations created by a contract between the government and the corporation to which the charter is granted. Formed by the charter into what the law denominates 'a body politic,' the individuals composing that body are merged into a legal entity on which the law bestows a personal character. Private individuals do not hold their private property subject to legislative regulation of the price which they may demand for its use, unless they have in some way accepted a privilege or franchise which carries with it such a right of public regulation; and as a number of individuals created into a corporation hold their corporate property as if they were one individual, we must look to the law which has endowed them with the corporate capacity for the measure of control which they have agreed shall be exercised over their property by the state."

Mr. Curtis then argues the following proposition:

"*First.* That in every state, and in regard to every railroad corporation, the contract between the state and that corporation is the sole source to which to look for the authority to regulate freight charges.

"*Second.* That unless by fair construction of the contract a legislative power to regulate freight charges has been reserved to the state, the corporation has the same right to regulate its own charges for its services as a private individual.

"*Third.* That it is not a fair or just construction of the contract to hold that the general power of altering or amending charters extends to the repeal or abolition of a power to make its own charges which has once been granted to a corporation by the charter."

In arguing these Mr. Curtis observes:

"I have witnessed the origin and growth of the whole railroad system of this country, which has been created since I came to years of discretion. At first the projectors of these great improvements were regarded with favor. We were, comparatively speaking, not a rich people, and we were glad to hold out encouragement to foreign capital to aid our domestic capital in the development of the resources of our wonderfully capable country. To the policy which prevailed here for the thirty or forty years which followed the invention of the locomotive, added to certain guarantees of our constitutional law and the steady and consistent

RAILROAD EARNINGS IN APRIL.

Name of Road.	Mileage. 1881.	1880.	Inc.	Dec	P. c.	Earnings. 1881.	1880.	Increase.	Dec.	P. c.	Earnings per Mile. 1881.	1880.	Inc	Dec.	P. c.
						$	$	$	$		$	$	$	$	
Ala. Gt. Southern	290	290	.....	.....	.....	58,293	45,344	12,949	.....	28.8	201	156	45	.....	28.8
At., Miss. & Ohio	428	428	.....	.....	.....	173,000	143,100	29,900	.....	21.0	404	334	70	.....	21.0
Bur., Cedar Rap. & No.	564	492	72	.....	14.6	184,680	141,652	43,028	.....	30.3	327	288	39	.....	13.5
Cairo & St. Louis	146	146	.....	.....	.....	35,154	31,626	3,528	.....	11.5	241	217	24	.....	11.5
Central Pacific	2,723	2,350	373	.....	15.3	1,874,000	1,356,716	517,284	.....	37.4	688	577	111	.....	19.2
Chesapeake & Ohio	435	435	.....	.....	.....	227,343	221,560	5,783	.....	2.6	523	510	13	.....	2.6
Chi. & Alton	840	840	.....	.....	.....	548,675	542,961	5,714	.....	1.1	653	646	7	.....	1.1
Chi. & Eastern Ill.	227	159	68	.....	42.5	135,764	83,689	52,075	.....	62.0	598	526	72	.....	13.7
Chi., Mil. & St. Paul	3,800	2,359	1,441	.....	60.5	1,360,000	871,041	388,959	.....	44.6	331	369	.....	38	10.3
Chi. & Northwestern	2,770	2,289	481	.....	21.9	1,454,361	1,294,573	159,788	.....	12.3	525	566	.....	41	7.2
Chi., St. P., Minn. & O., East Div	340	260	80	.....	30.8	189,106	130,916	58,190	.....	44.4	556	504	52	.....	10.3
St. P. & S. C. Div	668	470	138	.....	29.4	64,571	128,292	.....	63,721	49.8	106	273	.....	167	61.2
Cin., Ind., St. L. & Chi.	380	300	.....	.....	.....	175,484	168,199	7,285	.....	4.3	585	561	24	.....	4.3
Cin. & Springfield	81	81	.....	.....	.....	79,815	72,696	7,119	.....	9.8	985	897	88	.....	9.8
Cleve., Col., Cin. & Ind.	371	371	.....	.....	.....	347,098	297,713	49,385	.....	16.5	636	802	134	.....	16.5
Cleve., Mt. Ver. & Del.	144	157	.....	13	8.3	35,353	36,270	.....	917	2.5	246	231	15	.....	6.5
Denver & Rio Grande	591	337	254	.....	70.5	433,212	164,883	268,329	.....	16.6	733	490	243	.....	49.6
Des Moines & Ft. Dodge	84	84	.....	.....	.....	30,225	18,146	12,079	.....	67.1	360	216	144	.....	67.1
East Tenn., Va. & Ga.	270	270	.....	.....	.....	101,849	84,451	17,198	.....	20.5	376	313	63	.....	20.5
Flint & Pere Marq.	318	300	18	.....	6.0	168,520	130,740	37,780	.....	28.8	530	436	94	.....	21.5
Hannibal & St. Jo.	292	292	.....	.....	.....	188,124	206,735	.....	18,611	9.0	644	708	.....	64	9.0
Houston & Tex. Cen.	580	516	64	.....	12.3	267,082	247,809	19,273	.....	7.8	460	480	.....	20	4.2
Ill. Cent., Ill. lines	918	873	45	.....	5.2	481,708	412,030	69,678	.....	16.9	525	472	53	.....	11.2
Iowa lines	402	402	.....	.....	.....	150,355	123,702	26,653	.....	21.5	374	308	66	.....	21.5
Ind., Bloom. & West.	212	212	.....	.....	.....	103,555	90,375	13,180	.....	14.6	489	426	63	.....	14.6
Ind., Dec. & Springf.	153	153	.....	.....	.....	41,220	31,917	9,303	.....	29.4	269	209	60	.....	29.4
Int. & Gt. Northern	626	526	100	.....	18.7	183,484	110,318	73,169	.....	63.5	293	219	73	.....	34.8
Lake Erie & West	362	362	.....	.....	.....	98,644	79,362	19,282	.....	24.4	272	219	53	.....	24.4
Louisville & Nashv.	1,837	1,318	519	.....	39.9	846,000	563,883	282,117	.....	50.0	461	435	26	.....	6.5
Memphis & Charleston	292	292	.....	.....	.....	84,406	63,115	21,291	.....	33.6	295	216	79	.....	33.6
Memphis, Pad. & No.	115	115	.....	.....	.....	19,191	14,066	5,125	.....	36.6	168	123	45	.....	36.6
Mil., Lake Sh. & West.	247	218	29	.....	13.2	43,777	30,346	13,431	.....	44.3	177	140	37	.....	26.9
Minn. & St. L.	243	195	48	.....	24.7	75,081	38,003	37,078	.....	97.6	309	185	124	.....	67.0
Mobile & Ohio	506	506	.....	.....	.....	162,027	140,091	21,936	.....	15.7	320	280	40	.....	15.7
Nash., Chatta. & St. L.	467	454	13	.....	3.0	183,526	155,466	28,060	.....	18.3	392	340	52	.....	15.3
N. Y. & New England	316	282	34	.....	12.1	212,869	179,689	33,180	.....	18.4	674	637	37	.....	5.8
N. Y., Penn. & O.	560	560	.....	.....	.....	477,973	412,870	59,103	.....	14.4	843	737	106	.....	14.4
Northern Central	326	326	.....	.....	.....	487,273	386,130	101,143	.....	26.2	1,495	1,188	307	.....	26.2
Northern Pacific	754	722	32	.....	4.5	214,755	186,075	28,680	.....	15.4	285	258	27	.....	10.5
Paducah & E'town	185	185	.....	.....	.....	41,957	28,941	13,016	.....	44.8	227	156	71	.....	44.8
Pennsylvania	1,902	1,872	30	.....	1.6	3,760,373	3,488,367	272,006	.....	7.8	1,976	1,863	113	.....	6.1
Peoria, Dec. & Evans.	250	126	124	.....	99.2	51,977	29,145	22,832	.....	78.7	208	231	.....	23	10.0
Phila. & Reading	883	926	.....	43	4.7	1,484,864	1,496,330	.....	11,466	0.8	1,682	1,616	66	.....	4.0
St. L., Alt. & T. H., Main Line	195	195	.....	.....	.....	137,883	108,434	29,452	.....	27.3	707	556	151	.....	27.3
Belleville Line	71	71	.....	.....	.....	56,890	47,028	9,862	.....	21.0	801	662	139	.....	21.0
St. L., Iron Mt. & So.	685	685	.....	.....	.....	535,000	408,241	126,759	.....	31.1	781	596	185	.....	31.1
St. L. & San Francisco	627	528	99	.....	18.7	265,298	174,502	90,796	.....	51.9	422	330	92	.....	27.9
St. P., Minn. & Manitoba	866	656	210	.....	32.0	425,685	333,014	92,671	.....	27.8	492	508	.....	16	3.0
Scioto Valley	100	100	.....	.....	.....	26,407	20,453	5,954	.....	29.0	264	205	59	.....	29.0
Texas & Pacific	660	444	116	.....	35.1	280,347	174,177	106,170	.....	61.0	425	392	33	.....	8.2
Wabash, St. L. & P.	2,479	2,300	179	.....	7.8	1,023,482	1,028,791	.....	5,309	0.5	413	447	.....	34	7.6
Total, 51 roads	33,341	28,830	4,567	56	.....	19,981,519	16,773,973	3,307,570	100,024	.....	599	582	17	.....	2.9
Total increase	.....	.....	4,511	.....	15.6	.....	.....	3,207,546	.....	19.1	.....	.....	.....	.....	.....

RAILROAD EARNINGS, FOUR MONTHS ENDING APRIL 30.

Name of Road.	Mileage. 1881.	1880.	Inc.	Dec	P.c.	Earnings. 1881.	1880.	Increase.	De-crease.	P. c.	Earnings Per Mile. 1881.	1880.	Inc.	Dec.	P. c.
						$	$	$	$		$	$	$	$	
Ala. Gt. Southern	290	290	.....	.....	.....	240,580	199,801	40,779	.....	20.4	830	689	141	.....	20.4
At., Miss. & Ohio	428	428	.....	.....	.....	687,200	637,343	49,857	.....	7.8	1,606	1,489	117	.....	7.8
Bur., Ced. Rap. & No.	564	492	72	.....	14.6	625,491	679,465	.....	53,974	7.9	1,109	1,381	.....	272	19.7
Cairo & St. Louis	146	146	.....	.....	.....	140,212	116,035	24,177	.....	20.8	960	795	165	.....	20 8
Central Pacific	2,688	2,350	338	.....	12.3	6,519,907	5,001,256	1,518,651	.....	30.3	2,446	2,128	318	.....	15.0
Chesapeake & Ohio	435	435	.....	.....	.....	802,753	845,338	.....	42,585	5.0	1,845	1,943	.....	98	5.0
Chicago & Alton	840	840	.....	.....	.....	2,033,527	2,190,502	.....	156,975	7.1	2,421	2,608	.....	187	7.1
Chi. & Eastern Illinois	227	159	68	.....	42.5	501,592	327,698	173,894	.....	53.1	2,210	2,061	149	.....	7.0
Chi. & Gd. Trunk	335	335	.....	.....	.....	458,507	356,600	701,907	.....	28.3	1,369	1,064	305	.....	28.3
Chi., Mil. & St. Paul	3,781	2,359	1,422	.....	59.5	3,851,000	3,274,763	576,237	.....	17.6	1,019	1,346	...	327	24.3
Chi. & Northwestern	2,770	2,289	481	.....	21.9	4,837,029	4,942,613	.....	105,584	2.1	1,746	2,160	.....	414	19.1
Chi., St. Paul, Minn. & O., Eastern Div	318	260	58	.....	22.3	605,675	462,499	143,176	.....	31.0	1,905	1,778	127	.....	7.1
St. P. & S. C. Div	608	457	151	.....	32.8	301,448	423,397	.....	121,949	28.8	496	926	430	.....	46.4
Cin., Ind., St. L. & Chi.	300	300	.....	.....	.....	692,935	694,652	.....	1,717	0.3	2,310	2,315	...	5	0.3
Cin. & Springfield	81	81	.....	.....	.....	204,565	281,196	23,369	.....	8.3	3,760	3,472	288	.....	8.3
Cleve., Col., Cin. & Ind.	371	371	.....	.....	.....	1,262,937	1,246,879	16,058	.....	1.3	3,404	3,361	43	.....	1.3
Cleve., Mt. V. & Del.	144	157	.....	13	8.3	132,991	141,281	.....	8,290	5.9	923	899	24	.....	2.7
Denver & R. G	571	337	234	.....	69.0	1,456,862	586,228	870,634	.....	148.6	2,552	1,739	813	.....	46.7
Des Moines & Ft. D'ge	84	84	.....	.....	.....	98,604	83,198	15,406	.....	18.5	1,174	990	184	.....	18.5
East. Tenn., Va. & Ga	270	270	.....	.....	.....	446,510	402,891	43,619	.....	10.8	1,654	1,492	162	.....	10.8
Flint & Pere Mar.	318	300	18	.....	6.0	583,371	505,769	77,602	.....	15.4	1,834	1,686	148	.....	8.8
Grand Trunk	1,404	1,273	131	...	10.3	3,473,119	3,257,331	215,788	.....	6.6	2,474	2,559	.....	85	3.3
Great Western	526	526	.....	.....	.....	1,727,925	1,557,966	169,959	.....	10.9	3,281	2,962	319	.....	10.9
Hannibal & St. Jo.	292	292	.....	.....	.....	640,861	765,841	.....	124,980	16.3	2,174	2,623	.....	449	16.3
Houston & Texas Cen	580	516	64	.....	12.3	1,280,487	1,077,384	203,103	.....	18.8	2,208	2,088	120	.....	5.8
Ill. Cen., Ill. lines	918	873	45	.....	5.2	1,817,913	1,826,822	.....	8,909	0.5	1,980	2,093	.....	113	5.4
Iowa lines	402	402	.....	.....	.....	443,868	530,359	.....	86,489	16.3	1,104	1,318	.....	214	16.3
Ind., Bloom. & West.	212	212	.....	.....	.....	379,458	377,019	2,439	.....	0.7	1,790	1,778	12	.....	0.7
Ind., Dec. & Springf.	153	136	17	.....	12.5	146,871	96,960	49,911	.....	51.5	960	713	247	.....	34.7
Inter. & Gt. Northern	613	526	87	.....	17.0	798,050	525,670	272,380	.....	51.8	1,302	999	303	.....	30.4
Lake Erie & Western.	362	355	27	.....	8.1	387,233	261,775	125,458	.....	47.9	1,070	781	289	.....	37.0
Louisville & Nash.	1,837	1,205	632	.....	52.6	3,414,583	2,425,966	988,617	.....	40.7	1,859	2,013	.....	154	7.6
Mem. & Charleston	292	292	.....	.....	.....	421,942	381,607	40,335	.....	10 6	1,445	1,307	138	.....	10.6
Mem., Pad. & No.	115	115	.....	.....	.....	76,840	68,104	8,736	.....	12.8	668	592	76	.....	12 8
Mobile & Ohio	506	506	.....	.....	.....	831,415	762,603	68,812	.....	9.0	1,643	1,507	136	.....	9.0
Nash., Chatta. & St.L.	467	454	13	.....	3.0	760,245	721,711	38,534	.....	5.3	1,628	1,590	38	.....	2.4
N. Y. & New England	316	382	34	.....	12.1	787,131	677,673	109,458	.....	16.1	2,491	2,403	88	.....	3.7
Northern Central	326	326	.....	.....	.....	1,707,993	1,466,810	242,183	.....	16.5	5,242	4,449	743	.....	16 5
Northern Pacific	730	644	66	.....	9.9	565,684	464,082	101,602	.....	21.9	775	699	76	.....	10.9
Pad. & E'town	185	185	.....	.....	.....	169,554	123,211	46,343	.....	37.7	916	666	250	.....	37.5
Pennsylvania	1,902	1,872	30	.....	1.6	13,889,508	12,794,681	1,094,827	.....	8.6	7,303	6,835	468	.....	6.8
Peo., Dec. & Evansv.	207	126	81	.....	64.3	770,750	98,268	72,482	.....	73.9	825	780	45	.....	5.8
St. L., A. & T. H., M. Li'e	195	195	.....	.....	.....	489,597	427,862	61,735	.....	14.4	2,512	2,194	318	.....	14.4
Belleville Line	71	71	.....	.....	.....	249,064	213,470	35,594	.....	16.7	3,508	3,007	501	.....	16.7
St. L., Iron Mt. & So.	685	685	.....	.....	.....	2,370,694	1,905,979	464,715	.....	24.4	3,461	2,782	679	.....	24.4
St. Louis & San Fran.	627	514	113	.....	22.1	918,017	767,311	150,706	.....	19.6	1,464	1,493	.....	29	2.0
St. P., Minn. & Man	866	656	210	.....	32.0	1,160,316	912,695	247,621	.....	27.1	1,340	1,392	.....	52	3.8
Scioto Valley	100	100	.....	.....	.....	99,852	90,740	9,112	.....	10.1	999	907	92	.....	10.1
Texas & Pacific	631	444	187	.....	42.2	1,116,741	854,197	262,544	.....	30.7	1,770	1,924	.....	154	8.0
Wab., St. L. & Pacific.	2,479	2,300	179	.....	7.8	3,773,612	4,079,805	.....	306,193	7.5	1,522	1,774	.....	254	14.3
Total, 52 roads	34,058	29,236	4,835	13	.....	71,038,334	63,217,205	8,838,774	1,017,645	.....	2,068	2,162	.....	76	3.5
Total increase	.....	.....	4,822	.....	16 5	.....	.....	7,821,129	.....	12.4	.....	.....	.....	.....	.....

course of our jurisprudence, we owe our civilization and our present wealth in a very large degree. America could not have become what it is if our laws and institutions and our public policy had not afforded securities to the investment of corporate capital, calculated, in a most remarkable manner, to concentrate it in enterprises that no individual fortune could have accomplished. But of late there has sprung up a disposition to assail this capital, as if it were a public enemy; to inculcate the belief that it threatens the safety of our political institutions; to get rid, if possible, of the obligations and restrictions of our fundamental law, and to devise new methods of public action, which amount practically to confiscation and plunder. The catch-word 'monopoly,' uttered without any intelligible meaning when applied to the business of a corporation that is constantly engaged in competitions for employment, and that enjoys no exclusive privilege of carrying; the assumption that the sovereign has made no contract which he cannot break; that he holds the capital of his subjects in his 'discretion,' because he has authorized them to make a purchase which could only be made under the authority of law; these and a few kindred absurdities are the staple of writers who are bold enough to warn the managers of our railroads that 'the sooner they learn to take correct views of their situation the better it will be for those interested in the securities of these corporations!' In forming my opinions of the conduct of railroad managers, I shall never commit the injustice of imputing corruption upon the wholesale assertions that a practice is notorious, which nobody undertakes to prove by anything more than assertion. I am disposed to believe that our 'modern railroad president' is a much maligned person. I know many railroad presidents who are undoubtedly anxious men, bearing a great weight of responsibility in the fiduciary relation in which they stand to the shareholders and bondholders of their companies. If they watch the legislatures with vigilance, if they use legitimate means to influence public opinion, if they guard the interests intrusted to their care with fidelity, what do they do more, or what do they do that is more blameworthy, than is done by other men who represent private interests that are subject to hostile attacks? Until I see, therefore, some honest and earnest effort to direct public attention to that which is, beyond all comparison, the greatest and most palpable danger to which our institutions are exposed, I shall hold myself excused for not joining in the clamor against corporations whose power, opportunities and means for corruption are as much exaggerated as the honesty and public virtue of their managers are unjustly depreciated. So long as this class of men, in defense of the rights of those for whom they are trustees, rely upon the law of the land, employ none but legitimate means of influencing public bodies and enlightening the public mind, my sympathy will go with them; and I cannot doubt that in the end their cause will prevail."

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

East Tennessee, Virginia & Georgia, special meeting, in Knoxville, Tenn., July 20, at noon.

Chesapeake & Ohio Canal, annual meeting, in Annapolis, Md., June 6.

Dividends.

Dividends have been declared as follows:

St. John & Maine, 1 per cent. from the earnings of the half-year ending Feb. 28.

Kentucky Central, 3 per cent. on preferred and 1 per cent. on common stock, both semi-annual.

Eastern in New Hampshire (leased to Eastern Company), 2¼ per cent., semi-annual, payable June 1.

Boston & Albany, 2 per cent., quarterly, payable June 30.

Central, of Georgia, 4 per cent., semi-annual, payable June 20; also, at the same time, a dividend of 40 per cent. in scrip bearing 6 per cent. interest.

Foreclosure Sales.

The *Chicago, Pekin & Southwestern* road was sold in Chicago, May 31, under foreclosure of second mortgage, and bought in for $750,000 by F. E. Hinckley, for account of bondholders. The first mortgage for $1,000,000 remains on the road. The total amount of debt subordinate to the first mortgage was $960,000. The road extends from Pekin, Ill., to Mazon, 94 miles. It has been supposed that both the Chicago & Alton and the Wabash desired to control the road, and a large part of the first-mortgage bonds are held in the Wabash interest.

Western Association General Passenger and Ticket Agents.

An informal meeting was held at the Kennard House, Cleveland, O., May 11.

Present—Messrs. Stevenson, Egan, Cary, Bronson, A. J. Smith, Kingsbury, Edgar, Prouty, G. W. Smith (by Mr. Baker), Johnson, Bennett, B. F. Mills, Shattuc, Ford, A. D. Smith, Daniels, Hall, and Townsend.

On motion, Mr. Stevenson was elected Chairman and Mr. Daniels Secretary.

On motion, the meeting proceeded to the informal discussion of the subjects proposed by the Executive Committee of the Western Association, as follows:

1. Round trip tickets. Should not the rate for those going by one road and back by another be higher than where the passenger goes and returns by the same road?

2. Cannot the members of this Association agree upon a uniform contract for round trip excursion tickets of all kinds, which shall not require the printing of new tickets every season? This having become a great burden upon most of the lines interested.

3. Cannot this Association agree upon a uniform reduction for important stated meetings, such as religious bodies, meetings of Grand Lodges of Masons, Odd Fellows, temperance organizations, state and county fairs, etc.

4. Is it not feasible for the lines, members of this Association, which are in competition with each other, to adopt a system of mutual notification in cases where a reduction in rates seems to be necessary, with a view to producing uniformity in the conduct of the business?

5. Motion will be made amending the constitution so as to permit the representatives of the Cincinnati Southern, Louisville Short Line, Kentucky Central and Chesapeake & Ohio railways to become members of this Association, notice having been given of this action at the last meeting.

6. Owing to the fact that the National Association, at its last meeting, adopted a resolution which virtually restricts the issue of coupon tickets to two classes, is it not feasible for this Association to take such action as will eventually lead to greater uniformity in the colors or tints of coupon tickets?

7. Will all lines in this Association agree to conform to circular of the Central Pacific Railroad, dated Feb. 15, 1881, requiring signature of purchaser and witnesses on all tickets sold over those lines?

On motion, the first subject was laid on the table.

On motion, Messrs. Shattuc, Daniels and Smith were appointed a committee to report the form of a ticket to be used for round trip excursion business.

After some discussion of the fourth subject, on motion it was resolved that the forms of notification, presented by Mr. Daniels of the Wabash, and now in use by that line, be adopted by the lines here represented, it being the sense of this meeting that their use will have a tendency to restore harmony and prevent the indiscriminate cutting of rates.

[These forms are simple and contain notice that the company will hereafter consult other lines concerned before making changes in rates, etc.]

The committee to whom was referred the form of ticket for round trip business reported the following form, which was on motion adopted.

Issued by

.....

Railroad.

TOURIST SPECIAL CONTRACT.

GOOD FOR ONE FIRST-CLASS PASSAGE

—to—

..... AND RETURN

When officially stamped on back hereof, and presented with Coupons attached.

In consideration of the reduced rate at which this Ticket is sold I, the undersigned, agree to and with the several Companies, over whose LINES this Ticket entitles me to be carried, as follows, to wit:

1st. That in selling this Ticket the ..... acts as Agent, and is not responsible beyond its own LINE.

2d. That this ticket is NOT TRANSFERABLE, and *no Stop-over* at an intermediate point will be allowed, unless specially provided for by the local regulations of the *Lines* over which it reads.

3d. That any alteration whatever of this Ticket renders it void.

4th. That it is good for GOING passage until..... .....188 , inclusive.

5th. That it is good for RETURN passage..... days from day of departure, but in no case later than..... 188 , and must first be presented to the duly authorized Ticket Agent of..... .....R. R. on the day of departure returning, who will require the holder to identify him, or herself, as the original purchaser, and will sign and officially stamp the back of this Contract.

6th. That I, the original purchaser, hereby agree to sign my name, and otherwise identify myself as such, whenever called upon to do so by any Conductor or Agent of the LINE or LINES over which this Ticket reads

7th. That BAGGAGE LIABILITY is limited to wearing apparel not exceeding $100 in value.

8th. That the Coupons belonging to this Ticket will not be received for passage if detached.

9th. That my signature shall be in manuscript and in ink.

10th. That unless all the conditions of this ticket are fully complied with, it shall be void.

11th. That I will not hold any of the LINES named in this Ticket liable for damages, on account of any statement not in accordance with this Contract, made by any employé of said LINES.

12th. And it is especially agreed and understood by me, that no Agent or employé of any of the LINES named in this Ticket has any power to alter, modify or waive in any manner, any of the conditions named in this Contract.

Signature.....

Witness.....

Date of Sale,.....188...

.....

General Ticket Agent.

On motion, it was resolved that for such meetings as it is thought best by the lines in interest to make a reduction, the rate to be made two cents per mile each way by the short line.

Adopted.

An motion, the fifth, sixth and seventh subjects were not discussed.

On motion, adjourned.

ELECTIONS AND APPOINTMENTS.

Atlanta & Alabama.—This company was fully organized May 28 by the election of the following directors: G. J. Foreacre, L. J. Hill, S. M. Inman, Anthony Murphy, W. H. Snowden, Atlanta, Ga.; A. C. Haskell, Columbia, S. C.; A. S. Buford, Joseph Bryan, T. M. R. Talcott, Richmond, Va. The board elected A. C. Haskell President; G. J. Foreacre, Vice-President. Office of the company at Atlanta, Ga.

Baltimore & Hanover—At the annual meeting in Hampstead, Md., May 26, the following directors were chosen: A. W. Eichelberger, Wm. H. Hoffman, S. Keefer, L. F. Melsheimer, C. M. Slagle, W. H. Vickery, C. C. Wooden. The board elected A. W. Eichelberger, President; W. H. Vickery, Vice-President; L. F. Melsheimer, Secretary; R. M. Wirt, Treasurer. The road is worked by the Hanover Junction, Hanover & Gettysburg.

Baltimore & Ohio.—Mr. L. Packard is now Master Car-Builder at the Mount Clare shops, Baltimore. He was formerly on the New York, New Haven & Hartford.

Baltimore & Potomac.—At the annual meeting in Baltimore, June 1, the old board was re-elected, and afterward re-elected Oden Bowie President; A. J. Cassatt, Vice-President; John Crowe, Secretary and Auditor; John S. Leib, Treasurer.

Boston, Concord & Montreal.—At the annual meeting in Plymouth, May 30, the old board was re-elected, as follows: J. A. Dodge, Plymouth, N. H.; J. P. Pitman, Laconia, N. H.; W. F. Daniell, Franklin, N. H.; S. N. Bell, Manchester, N. H.; Peter Butler, J. P. Spaulding, J. Thomas Vose, Boston. The board re-elected J. Thomas Vose President; C. M. Whittier, Clerk.

Boston, Hoosac Tunnel & Western.—Mr. Wm. L. Burt has been chosen President, in place of F. L. Ames, resigned. Mr. Burt was formerly President.

Canada Southern.—At the annual meeting in St. Thomas, Ont., June 1, the following directors were chosen: William H. Vanderbilt, Cornelius Vanderbilt, James Tillinghast, Augustus Schell, Samuel F. Barger, Sidney Dillon, Edward A. Wickes, A. G. Dulman, Joseph E. Brown.

Chicago & Alton.—General Superintendent C. H. Chappell is appointed Assistant General Manager also.

Chicago, Rock Island & Pacific.—At the annual meeting in Chicago, June 1, the following directors (one-third of the board) were chosen: James R. Cowing, Jay Gould, Henry H. Porter, Francis H. Tows. The board re-elected Hugh Riddle President; Francis H. Tows, Secretary and Treasurer.

Chicago, St. Paul, Minneapolis & Omaha.—Mr. George V. Morford has been appointed Superintendent of the Nebraska Division (Sioux City to Omaha), with office in Omaha, Neb.

Chicago, Texas & Mexican Central.—The officers of this company are: President, Daniel H. Hale; Vice-President, Amos T. Hall; Secretary, Asahel F. Bennett; Treasurer, Clinton B. Hale; Chief Engineer, George W. Waite. The executive office is in Chicago, and the Chief Engineer's office at Dallas, Texas.

Concord & Claremont.—At the annual meeting in Concord, N. H., last week the following directors were chosen: George E. Todd, Charles O. Stearns, Dexter Richards, Daniel W. Johnson, Charles P. Sanborn, Mason W. Tappan, Henry C. Sherburne.

Elizabeth City & Norfolk.—The officers of this company are: President, W. H. Philips; Directors, James Benedict, H. J. Cullen, Jr., James D. Fish, E. C. Sampson, John N. Whiting, G. C. Wood; Secretary, E. W. Corlies; Treasurer, W. G. Dominick.

Hannibal & St. Joseph.—Mr. James Long has been appointed Superintendent of Machinery and Master Car-Builder, with office in Hannibal, Mo. Mr. Long has been for some time Master Mechanic of the Kaw Valley Division of the Union Pacific.

Houston, East & West Texas.—Mr. C. G. Woodbridge is appointed Chief Engineer and Superintendent of Construction.

Illinois Central.—At the annual meeting in Chicago, May 25, the directors (one-fourth of the board), whose terms then expired, were re-elected, as follows: W. K. Ackerman, B. F. Ayer, James C. Clarke.

Illinois Central Leased Lines.—At the yearly meetings in Chicago, May 25, the following officers were chosen: *Chicago & Springfield.*—President, W. K Ackerman; directors, B. F. Ayer, L. V. F. Randolph; Secretary, John Dunn; Treasurer, J. C. Willing. *Kankakee & Southwestern.*—President, W. K. Ackerman; directors, E. T. Jeffery, W. J. Maurice, J. F. Tucker; Secretary, W. J. Maurice; Treasurer, J. C. Willing.

Knoxville & Augusta.—This company has been organized as successor to the old Knoxville & Augusta (formerly Knoxville & Charleston) Company, with the following directors: R. N. Hood, Knoxville, Tenn.; G. J. Foreacre, Atlanta, Ga.; Skipwith Wilmer, Baltimore; Hiram Sibley, Rochester, N. Y.; H. W. Sibley, New York. Mr. Hood was President of the old company; the others are all directors of the Atlanta & Charlotte Air Line. The board elected R. N. Hood, President; Skipwith Wilmer, Secretary; Charles Burger, Treasurer.

Louisville & Nashville.—Mr. George Nason is appointed Superintendent of the Mobile & Montgomery Division and of the Pensacola & Selma and Selma divisions, in place of Mr. W. D. Chipley, who takes charge of the construction of the new line from Pensacola to the Chattahoochie.

Mr. E. Saltmarsh succeeds Mr. Nason as Superintendent of the Pensacola Division.

Louisville, New Albany & Chicago.—The following circular is dated May 25: "The Freight and Ticket departments have been separated, and the following appointments will come into effect June 1: A. B. Southard, General Freight Agent; Murray Keller, General Passenger and Ticket Agent. Headquarters at Louisville, Ky."

Manchester & Lawrence.—At the annual meeting last week the following directors were chosen: E. A. Abbott, Asa Fowler, J. A. White, Concord, N. H.; Benjamin F. Martin, Nathan Parker, Manchester, N. H.; J. W. Smith, Andover, Mass.; W. A. Tower, Boston.

Meredith & Conway.—At the annual meeting in Plymouth, N. H., May 30, the following directors were chosen: J. Wentworth, J. T. Vose, J. S. Pitman, S. N. Bell, J. A. Dodge, B. H. Corning, J. L. Huntress. J. Wentworth was chosen President, and B. H. Corning, Clerk.

Midland, of Pennsylvania.—The officers of this new company are: President, Rudolph T. McCabe, Scranton, Pa.; directors, Daniel Hornell, S. H. Hicks, John McCabe, H. A. Knapp, John I. Richards, Lewis Waters, Scranton, Pa.; Wm. O. McDowell, Bloomfield, N. J.; G. E. Armstrong, A. D. Julliand, H. P. Talmage, A. S. Rosenbaum, Meyer Lenman, New York.

Nashua & Lowell.—At the annual meeting last week the following directors were chosen: Wm. W. Bailey, Cornelius V. Dearborn, J. W. White, Nashua, N. H.; A. M. Shaw, Lebanon, N. H.; Francis A. Brooks, Francis V. Parker, G. K. Richardson, Boston. The road is leased to the Boston & Lowell.

Nashua & Rochester.—At the annual meeting in Nashua, N. H., May 31, the following directors were chosen: J. C. Eastman, Francis H. Dewey, E. B. Stoddard, Charles W. Smith, Charles W. Turner, F. H. Kinnicut, Aaron W. Sawyer, A. H. Dunlap, Benjamin Fletcher, Jr., Joseph C. Burley, Edwin Wallace, E. W. Hoyt, A. J. Pillsbury. Francis H. Kinnicut was chosen President; A. F. Stevens, Clerk The road is leased to the Worcester & Nashua.

New York Central & Hudson River.—At the annual meeting in Albany, June 1, the old board was re-elected as follows: W. H. Vanderbilt, Cornelius Vanderbilt, Wm. K. Vanderbilt, Fredk. W. Vanderbilt, Augustus Schell, Samuel F. Barger, Chauncey M. Depew, James H. Rutter, J. Pierrepont Morgan, Cyrus W. Field, New York; Chester W. Chapin, Springfield, Mass.; John Allen, Jr., Buffalo, N. Y.; James M. Marvin, Saratoga Springs, N. Y.

New York, Lake Erie & Western.—Mr. O. Chanute has been relieved from duty as Assistant General Superintendent, and will devote his whole time to the Engineering Department.

Mr. Benjamin Thomas has been appointed Assistant General Superintendent, in place of Mr. Chanute. Mr. Thomas has been for eight years past Superintendent of the Delaware Division, and was previously agent and train dispatcher.

Mr. Charles Neilson succeeds Mr. Thomas as Superintendent of the Delaware Division. Mr. Neilson began railroad work on the Northern Pacific, where he served nearly five years, working his way up from the gravel train to have charge of track-work. He came to the Erie in 1873, and, after serving in the motive power and transportation departments, was appointed Fuel Agent four years ago. Mr. Neilson is a member of the American Society of Civil Engineers.

New York, Pittsburgh & Chicago.—The officers of this new company are: President, James S. Negley, Pittsburgh; Vice-President, Delos E. Culver, New York; directors, John R. McPherson, Charles Siedler, W. S. Gurnee, Henry Day, W. A. Cole, James Robinson, F. W. Lockwood; Treasurer, Wm. N. Riddle, Pittsburgh.

Northern (New Hampshire).—At the annual meeting in Concord, May 26, the following directors were chosen: Henry C. Sherburne, Geo. E. Todd, Concord, N. H.; George W. Nesmith, Alvah W. Sulloway, Franklin, N. H.; Joseph H. Benton, Jr., Francis B. Hayes, Uriel Crocker, Boston.

Pennsylvania Company.—Mr. Wm. Borner is appointed General Western Freight Agent, with office in Chicago, in

place of R. C. Meldrum, deceased. Mr. Frederick A. Belz succeeds Mr. Borner as Local Freight Agent in Chicago.

Peterboro.—At the annual meeting last week the following directors were chosen: James Scott, G. W. Gill, George A. Ramsdell, S. A. B. Abbott, J. H. Gage, Edward Spaulding. The road is worked by the Boston & Lowell Company.

Rogers & Siloam Springs.—The directors of this new company are: D. R. Davidson, P. H. Van House, Fayetteville, Ark.; E. P. Watson, Bentonville, Ark.; Peter Van Winkle, War Eagle, Ark.; J. A. C. Blackburn, Rogers, Ark.; James Dunn, John O'Day, Springfield, Mo.; C. W. Rogers, A. G. Thompson, St. Louis. The company is controlled by the St. Louis & San Francisco.

Rome, Watertown & Ogdensburg.—The following directors have been chosen by the stockholders: Samuel Sloan, Talcott H. Camp, Moses Taylor, John S. Farlow, Christian Zabriskie, Jr., Solon D. Hungerford, Percy R. Pyne, William H. White, John S. Barnes, Theo. Irwin, William E. Dodge, Roswell G. Rolston.

Sullivan County.—At the annual meeting recently the following directors were chosen: A. B. Harris, C. J. Amidon, G. Morris, Frederick Billings, H. C. Robinson, John B. Page and J. H. Williams. The officers are: President, A. B. Harris, Springfield, Mass.; Clerk, J. H. Albin, Concord, N. H.; Treasurer, E. F. Lane, Keene, N. H. The road is controlled by the Connecticut River Company.

Suncook Valley.—At the annual meeting in Manchester, N. H., May 26, the following officers were chosen: President, S. N. Bell; directors, Natt Head, Reuben L. French, Frederick Smyth, C. H. Carpenter, L. B. Towle, M. V. B. Edgerly; Clerk, L. G. Clark.

Suncook Valley Extension.—At the annual meeting in Manchester, N. H., May 26, the following were chosen: President, S. N. Bell; directors, Frederick Smyth, Natt Head, Wm. H. Berry, Daniel E. Tuttle, Thomas Cogswell, G. W. Emerson; Clerk, B. P. Cilley.

Union Pacific.—Mr. James McKenzie, Sr., has been appointed Master Mechanic of the Kaw Valley Division, with office at Armstrong, Kan., in place of James Long, who has gone to the Hannibal & St. Joseph.

United New Jersey.—At the annual meeting in Trenton, N. J., May 31, the following directors were elected: John Jacob Astor, John C. Barron, William Bucknell, A. L. Dennis, Charles E. Green, Robert Lenox Kennedy, Thomas McKean, Isaac W. Scudder, John T. Stevens, R. F. Stockton, Ashbel Welch and Samuel Welsh.

Whitefield & Jefferson.—At the annual meeting in Plymouth, N. H., May 30, the following directors were chosen: Aaron Ordway; A. L. Brown, W. G. Brown, N. R. Perkins, J. A. Dodge, J. T. Vose, W. F. Daniell, S. N. Bell.

PERSONAL.

—Mr. John Nyman, an old and respected citizen of Hanover, Pa., and for many years a director of the Hanover Junction, Hanover & Gettysburg Company, died May 22, aged 73 years.

—Mr. S. R. Callaway, who recently left the Detroit & Bay City to be General Superintendent of the Chicago & Grand Trunk road, was presented with a valuable silver set at Detroit, May 28, by the officers and employés of his old road.

—Gen. J. A. Williamson, Commissioner of the General Land Office in the Interior Department at Washington, has resigned his position, and will, it is reported, take charge of the Land Department of the Atchison, Topeka & Santa Fe Company.

—Mr. John W. Garrett, President of the Baltimore & Ohio Company, reached Baltimore June 1, after an absence of about a year in England. He was met at Camden Station by a number of prominent business men of Baltimore, who gave him an informal but very hearty reception.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Four months ending April 30:				
Northern Central.	$1,708,993	$1,466,810	I. $242,183	16.5
Net earnings....	688,536	491,822	I. 96,714	19.7
Third week in May:				
Chi. & Eastern Ill.	$34,542	$24,953	I. $9,589	34.4
Chi., Mil. & St. P..	364,000	265,232	I. 98,768	37.5
Louisv. & Nashv..	182,400	145,400	I. 37,000	25.5
Northern Pacific..	80,447	49,138	I. 31,309	63.9
St. L., Iron Mt. & So.....	135,500	95,030	I. 40,470	42.6
St. P., Minn. & Man.....	94,200	74,800	I. 19,400	25.9
Week ending May 21:				
Chi. & Gd. Trk...	$27,224	$29,870	D. $2,646	8.8

Grain Movement.

For the week ending May 21 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years:

Year.	Northwestern receipts.	Northwestern shipments. Total.	By rail.	P. c. by rail.	Atlantic receipts.
1874.....	5,970,532	3,595,353	956,626	25.9	3,526,682
1875.....	2,765,782	2,782,468	1,003,242	35.8	2,661,075
1876.....	3,286,744	3,567,864	1,820,456	51.0	5,316,566
1877.....	2,294,405	2,330,304	794,342	34.1	3,506,828
1878.....	5,9 9,890	4,907,025	1,957,051	39.9	6,117,072
1879.....	3,713,978	4,802,116	2,470,084	51.5	5,977,584
1880.....	6,220,796	5,231,104	1,437,857	27.8	4,960,665
1881.....	4,751,613	6,228,275	1,755,217	28.2	7,087,741

The receipts of the Northwestern markets, though smaller than receipts of the corresponding week in 1880, 1878 and even 1874, were 27 per cent. more than the week before and were much the largest of the year so far. The shipments of these markets were larger than in the corresponding week of any previous year, 53 per cent. larger than the week before, and the largest since last October. The rail shipments were larger than in the corresponding week last year and the largest since navigation opened. Besides the rail shipments, 730,401 bushels, or 11.7 per cent. of the whole, went down the Mississippi. The Atlantic receipts were enormous, 40 per cent. larger than in the corresponding week last year, and nearly twice as great as in the previous week, being swelled by the arrival at New York of the canal boats that were frozen in on the Eastern Division of the canal last fall.

Of the Northwestern receipts, Chicago had 40.2 per cent., St. Louis 23.2, Peoria 15.6, Toledo 11.2, Milwaukee 6.6, Cleveland 1.7, and Detroit 1.4 per cent. Of the increase over the previous week, about one-half is at Chicago and one-half at St. Louis. The Chicago receipts are much the largest it has had this year; St. Louis receipts are about equal to the average in April, but are more than those of the first two weeks of May together.

Of the Atlantic receipts, New York had 74 per cent., Philadelphia 9.5, Baltimore 7.1, Montreal 4.8, Boston 3.8, New Orleans 0.7, and Portland 0.1 per cent. The receipts of New York were extraordinary, more than twice as great as in any other week this year, and equaled in only one week of the year 1880. Meanwhile the Boston receipts were with one exception the smallest of the year, Philadelphia's were twice as large as the week before, and with one exception were the largest of the year, while Baltimore's were much smaller that its average, though 80 per cent. more than the week before, while the New Orleans receipts were with one exception the smallest of the year, no tow having arrived during the week, evidently. So far, however, the shipments down the Mississippi seem not to be affected by the opening of lake navigation.

Exports from Atlantic ports for five successive weeks have been:

	Week ending. May 25.	May 18.	May 11.	May 4.	April 27.
Flour, bbls..	91,901	101,310	73,411	104,271	118,901
Grain, bush.	3,280,568	3,114,802	3,371,309	2,397,958	3,117,793

The exports seem remarkably uniform from week to week. They are much less than at this time last year.

Receipts and shipments from Chicago and Milwaukee for the week ending May 27 were:

	Receipts. 1881.	1880.	Shipments. 1881.	1880.
Chicago.....	2,551,717	4,800,361	3,833,706	3,570,404
Milwaukee.....	320,047	481,119	637,057	1,141,604

At Buffalo receipts and shipments for the week were:

	Receipts. 1881.	1880.	Shipments. 1881.	1880.
By water	2,135,700	2,594,805	1,812,000	2,388,515
By rail	402,100	609,500	1,202,500	1,328,500
Total.....	2,537,800	3,204,305	3,014,500	3,717,015

Receipts at four Eastern ports for the same week were:

	New York.	Boston.	Phila.	Baltimore.
1881	3,419,644	273,496	1,176,700	873,597
1880.....	4,199,578	393,295	1,731,400	788,276
Increase.....				85,321
Decrease.....	779,934	119,799	554,700	

The Philadelphia and Baltimore receipts are much larger than for a few weeks previous.

Coal Movement.

Coal tonnages for the week ending May 21 are reported as follows:

	1881.	1880.	Increase.	P. c.
Anthracite.....	409,923	398,193	11,730	2.9
Semi-bituminous.....	98,749	.....	.....	....
Bituminous, Penna.....	33,393	.....	.....	....
Coke, Penna.....	47,678	.....	.....	....

Negotiations are pending for a stoppage of mining by the anthracite companies every other week in June and July. They have not been successful so far, one or two of the companies refusing to join in a stoppage.

Chicago Shipments Eastward.

Through shipments of freight from Chicago eastward over the several routes during the week ending May 28 were, in tons:

	Tons.	P. c. of total.	Pool p. c.
Grand Trunk.....	2,499	6.5	10.0
Michigan Central.....	10,047	25.9	26.0
Lake Shore,.....	8,561	22.1	23.0
Fort Wayne.....	9,349	24.1	23.0
Pan-handle.....	4,330	11.2	10.0
Baltimore & Ohio.....	3,962	10.2	8.0
Total.....	38,748	100.0	100.0

Of these shipments 10,796 tons were flour and 21,265 grain. As the latter is taken in competition with the lake vessels, by which the rates were very low last week, they are decidedly large. They are equivalent to 704,330 bushels of wheat.

The shipments for four consecutive weeks have been, in tons, for this year and last:

	1881.	1880.
Week ending May 7.....	22,351	27,000
Week ending May 14.....	19,526	24,485
Week ending May 21.....	42,523	29,067
Week ending May 28.....	38,748	34,218
Four weeks.....	123,148	114,770

This year the shipments of the first two weeks were greatly reduced by the strike, yet for the four weeks the shipments were larger than last year, although last year the movement of grain at Chicago was the largest that ever has been known in a spring month, and some 60 per cent. larger than this year.

Rail and Water Rates.

A circular from Commissioner Fink announces that the Central Vermont and the Grand Trunk have become parties to the agreement with the Southern lines, that their rates by rail and water from New York to Western points shall not be more than 12, 9, 7½ and 4½ cents per 100 lbs., less than the all rail rates, for the several classes of freight, on insured bills of lading.

Pacific Through Freights.

Shipments of through freight eastward over the Central Pacific in April were: From San Francisco, 6,484 tons; interior points, 1,466 tons; total, 7,950 tons. The total shipments in April, 1880, were 3,353 tons, showing an increase this year of 4,597 tons, or 137.1 per cent. The leading items of freight last month were barley, wool, wine, salmon and beans.

Chicago and Milwaukee Receipts.

For the months of May receipts at Chicago and Milwaukee for four successive years have been:

	1878.	1879.	1880.	1881.
Chicago:				
Grain, bush.....	14,711,152	11,461.258	16,629,411	9,322,685
Flour, bbls.....	234,414	282,879	219,100	393,251
Hogs, No.....	439,184	547,913	561,522	455,203
Milwaukee:				
Grain, bush	3,237,437	2,664,293	1,764,203	1,442,019
Flour, bbls.....	209,159	201,930	175,624	327,337
Hogs, No.....	13,384	17,705	20,992	23,416

The receipts of grain at Chicago were the smallest for four years, and though the flour receipts were much larger than ever before, yet taking flour and grain together the receipts there are equivalent to but 11,092,315 bushels this year, against 17,915,361 last year, 12,733,988 in 1879 and 15,766,015 in 1878—still the smallest for four years. At Milwaukee the decrease in grain receipts since last year is more than balanced by the increase in flour, but the two together are much less than in 1878 and 1879. The hog receipts at Chicago are nearly a fifth less than in 1880 and 1879.

Depth of the Welland Canal.

The Cleveland *Herald*, under the heading "Touched Bottom in the Welland Canal," has the following: "It was announced by the organs of the Canadian government the other day that the Welland Canal would certainly be ready by July 1 for the passage of vessels drawing 12 feet of water. Shippers and vessel owners were notified that engagements based on the existence of 12 feet of water at all points between Port Colbourne and Port Dalhousie could safely be made. The work remaining to be done was described in our columns about a fortnight since, and from that showing it was evident there would be sharp work on the part of one, at least, of the contractors during the next six or seven weeks if the promise of 12 feet of water was to be fulfilled. At the opening of the canal for the season the authorities announced that vessels drawing 10 feet of water could go through with safety on and after May 7, by using part of the new and part of the old works. If the pledges for July are no better kept than those for May, it will be advisable for shippers and vessel men to make no engagements based on the promise of deeper water until its existence becomes a demonstrated fact. A vessel drawing 10 feet of water attempted to get through last week and touched bottom several times. It is claimed on behalf of the canal authorities that the impediments were only the remains of construction dams left in the canal, but that does not alter the fact that vessels drawing 10 feet of water cannot get through with safety.

"It will be remembered that in our account of the present condition of the canal and the preparations for opening the new route in July it was explained that the present aqueduct at Welland will have to be used for some time, but that to obtain the required depth of water timbers have been removed and part of the concrete bottom cut away. The Toronto *Globe*, which, being an anti-Administration paper, cavils at all that is done by the present Dominion Government, says great risk will be run in sending a vessel drawing 12 feet through the old aqueduct. If she should touch bottom in passing the consequence would probably be her entire loss. The chances of such a vessel getting through are rendered more hazardous by the fact that the canal is still, for a time, even for its 10 feet of water, dependent upon the Grand River feeder, in which the water is unusually low. The *Globe* thinks it much to be doubted whether anything will be gained by asking vessels of 12 feet draught to enter the canal until the new aqueduct is completed, and until the Lake Erie level has been attained permanently. We doubt if, on such a showing, our vessel-owners will make the experiment."

RAILROAD LAW.

Massachusetts Railroad Legislation.

A correspondent of the New York *Evening Post* gives the following account of the legislation affecting railroads passed by the Massachusetts Legislature that has just adjourned:

"The East Boston Railway Dock Elevator Company and the East Haven Company have both been incorporated, each with a minimum capital of $250,000, and the former with power to increase to $1,000,000 and the latter to $3,000,000, for the purpose of building docks, wharfs, elevators and warehouses and for the construction of railroad tracks to connect with existing lines for the handling of freight. The East Boston front has deeper water than the side of Boston proper, and all the great ocean steamers arriving at this port load and discharge there. Work will be begun in earnest by these corporations, and will result in a great increase of the terminal facilities of the front. The proposed new piers will be accessible to both the Boston & Albany and Fitchburg (or Hoosac Tunnel) railroad lines. Most important of all the railroad bills is the one appropriating $324,500 for double-tracking the state line of the Troy & Greenfield Railroad from Greenfield to the eastern end of the Hoosac Tunnel. This bill called out strong support and great faith in the business future of the Tunnel line, and was passed by a very large majority in the House. The attempt of the old Troy & Greenfield corporation to have the Supreme Court pass upon a plan by which they could redeem the tunnel did not find much support; not, apparently, because there is any desire to deprive the company of any rights it may have under the old mortgages, but because there was a distrust of the particular bill. An extension of time to May 1, 1883, was granted to the Massachusetts Central Railroad in which to complete its line. This road will connect with the Tunnel road and use the Boston terminal facilities of the Boston & Lowell road. It runs across the state midway between the Fitchburg and Boston & Albany roads, and will be a new competitor for Western business. A bill was passed authorizing the Hartford & Connecticut Valley Railroad to extend its tracks from the Connecticut state line to Holyoke. Employment of persons afflicted with color blindness is hereafter forbidden to railroads, and a system is provided for the examination of workmen. To permit the sale of the state stock of the New York & New England Railroad at the discretion of the Governor and Council a bill was introduced, but the Legislature refused to relax its hold and trust to the authorities. Walter Shanly's claim for additional compensation on his tunnel contract was rejected, though it was supported by the Mayor and leading business men of Boston. The third attempt to procure a charter for elevated railroads in Boston was defeated by a large majority, as it has been in previous years, though the capitalists exerted themselves more than ever to get power to use Boston streets for private purposes."

THE SCRAP HEAP.

British Rail Exports.

Exports of steel and iron rails from Great Britain to the United States, and to all countries, in the month of April, and for the four months ending with April, have been:

		1881.	1880.	1879.
April:				
To United States.....	Iron,	10,352	13,727	.....
	Steel,	28,050	7.075	.....
	Total,	38,402	28,802	.....
To all countries...	Iron,	11,460	16,804	3,756
	Steel,	56.463	45,287	25,401
	Total.	67,923	62,091	29,157
Four months:				
To United States...	Iron,	37,263	37,794	376
	Steel,	49,026	24,597	808
	Total,	86,289	62,391	1,184
To all countries....	Iron,	41.512	49,600	14,261
	Steel,	136,859	122,242	77,905
	Total,	178,371	171,842	92,166

The exports to this country included less iron but nearly four times as much steel in April this year as last; and for the four months the exports of iron are nearly the same, while those of steel are twice as great as last year, and in the total there is an increase of nearly 40 per cent. But for the increase in exports to the United States there would have been a large decrease in the total British rail exports; that is, the consumption of the other countries which Great Britain sup-

plies has decreased, having been as follows for the four months in the three successive years:

	1881.	1880.	1879.
Tons	92,082	109,451	90,982

The exports to the United States this year have been very nearly sufficient to lay 1,000 miles of track with 56 lbs. rails, and they formed 48.4 per cent. of the total British exports, against 36.3 per cent. in 1880 and 1.3 in 1879.

The exports of the United States in successive months this year have been:

	Iron.	Steel.	Total.
January	5,663	1,705	7,368
February	10,419	4,380	14,799
March	10,829	14,891	25,720
April	10,352	28,050	38,402
Four months	37,263	49,026	86,289

The imports of steel rails were thus much larger in April than in any other month of the year—a third more than in the three months previous. The imports of iron rails, on the other hand, do not increase.

The Rail Market.

The market is unsettled, with many transactions, but chiefly on private terms. Quotations are from $56 per ton at mill, for next winter and spring to $63 for early deliveries. Some transactions are reported in English steel rails at $61 to $63, at port.

Many small sales of iron rails are reported at $46.50 to $47 for heavy rails, up to $51 per ton at mill for light sections.

Old iron rails are dull, and somewhat lower. Philadelphia reports are $26.50 to $27 per ton, with few sales.

Railroad spikes are quoted at $2.55 to $2.65 per 100 lbs.; fish-plates, $2.40 to $2.50; track-bolts, $3.50 to $4, according to specification.

Awards to Americans at the Melbourne World's Fair.

Among those receiving awards of "the first order of merit" at the Melbourne World's Fair are Warren Hill, of Boston, for ticket punches; the Howe Scale Co.; the Morse Twist Drill Co., for taps and dies, etc.; the Washburn & Moen Co., for barbed wire fencing; A. Whitney & Sons, for chilled cast-iron car wheels.

Surprised all Around.

As train 12 drew into the depot on Saturday, a seedy looking tramp alighted from the front platform of the forward express car, where he had been stealing a ride, and walking to the depot platform stood there and waited for the train to depart, he having finished his journey. Al. Little, the night baggage master, saw the tramp alight, and when Conductor Frank Rosencrans came along pointed him out and said, "There's a commuter." For the fun of the thing, and not expecting to obtain a cent, the conductor approached the tramp and said: "Eighty-five cents, sir!" "Eighty-five cents? What for?" "For your ride from Port Jervis," sternly answered the conductor. Without another word the tramp put his hand into his pocket and paid the conductor the sum named, and in return was given a drawback ticket for five cents. It is hard to say which was the more surprised, the conductor or the tramp.—*Middletown (N. Y.) Argus.*

A Good Asset.

The other day, down in Marysville, the suit of one George Gambs against the S. P. R. R., for damages incurred in last summer's excursion train smash-up, came up for trial.

The case was evidently going in favor of the plaintiff, who had detailed his terrible injuries in a pathetic manner, when the sympathetic foreman of the jury wiped his eyes and said:

"You say, my poor fellow, that the baggage car carried away three of your ribs, which will leave a dangerous and unsightly wound as long as you live?"

"I did, sir," replied the victim, in a sad voice.

"Just be kind enough to remove sufficient clothing, so that the jury can inspect the injury."

"I—er—I'd rather not" stammered the witness, "I—er—might catch cold. Isn't the surgeon's certificate enough?

"Yes, but we should like to know the exact fact," said the foreman.

"This hesitation looks very peculiar," growled the judge. "The witness will peel at once, according to the revised Statutes 841-63."

"Well, the fact is, gentlemen," said the witness, desperately wiping the perspiration from his forehead; "the fact is, that I am not the smashed up party myself. My name is Scudder."

"Then what in —— do you mean by this action?" thundered his honor.

"The action is all right enough, may it please the Court," explained the plaintiff. "Gambs was all broke up in this collision, just as stated, but as he had been owing me $4,000 for a long time, and as all the assets he had in the world was that hole in his side, I just clapped a first lien on it. Last month he was sent to jail for sheep stealing, and so I just thought I'd run the case on its merits, so to speak, and take the chances."

And although the railroad company's attorney moved a nonsuit, the jury were so impressed with the propriety of the transaction that they gave a verdict for the amount and costs before the judge could be waked up again in time to interfere.—*San Francisco Evening Post.*

The World's Coal and Pig-Iron Production.

At the annual meeting of the British Iron and Steel Institute in London, May 4, the new President, Mr. Josiah T. Smith, of the Barrow Steel Works, in his inaugural address gave the following statistics:

Production of Pig-Iron in the Principal Ironmaking Countries in the World in 1869 and 1880.

Countries.	1869. Tons.	1880. Tons.	Increase. Tons.	P. c.
Great Britain	5,445,757	7,721,833	2,276,076	41.8
United States	1,916,641	4,295,414	2,378,773	124.1
Germany	1,180,579	1,950,000	769,421	65.2
France	1,018,899	1,733,102	714,203	70.1
Belgium	534,319	610,000	75,681	14.2
Totals	10,096,195	16,310,349	6,214,154	61.5

Production of Coal Throughout the World in 1869 and 1880.

Countries.	1869. Tons.	1880. Tons.	Increase. Tons.	P. c.
Great Britain	107,506,683	147,000,000	39,493,317	36.8
United States	28,100,000	63,500,000	35,400,000	126.0
Germany	26,774,000	42,161,000	15,387,000	57.5
France	13,509,000	18,857,000	5,348,000	39.0
Austria	4,100,000	6,000,000	1,900,000	46.3
Belgium	12,943,000	14,000,000	1,057,000	8.1
Russia	588,000	2,200,000	1,612,000	274.0
Spain	550,000	750,000	200,000	36.4
Totals	194,070,683	294,468,000	100,397,317	51.2

Extraordinary Steamship Speed.

The fastest continuous speed of a sea-going vessel that we ever heard of was, says the Haverfordwest *Telegraph*, maintained by the paddle steamer Glen Rosa, on a recent passage from Glenrock to Milford Haven, which she ran in as nearly as possible 18 hours. This is equivalent to a speed of 21 miles per hour, and when off St. Ann's Head, at the entrance of the harbor, a little more expansion was given to the valve and she actually ran up to her berth at the Milford Haven docks at the rate of 23 miles per hour without any slacking or checking. From the actual performance of this steamer, says the same journal, it would appear certain that the opinions of the recent distinguished American and English visitors to the new docks at Milford Haven, and the Atlantic & Express Steamship Company are not too highly colored, as it must be admitted that if such speed as 21 miles can be maintained as the usual ordinary day's work by a boat only 208 ft. in length, the same thing can be maintained by larger ships, especially when engined on the compound high and low-pressure principle, in a six day's run across the Atlantic.

OLD AND NEW ROADS.

Arkansas Midland.—It is proposed to extend this road from Aberdeen, Ark., to Little Rock, about 60 miles. Some 20 miles were graded several years ago. The most expensive work will be the bridge over White River at Aberdeen.

Atlanta & Alabama.—This company has been fully organized and $500,000 stock, the amount required by the charter before work can be begun, has been subscribed. The organization is controlled in the Richmond & Danville interest. The line is to run from Atlanta, Ga., to Birmingham, Ala., about 150 miles.

Augusta & Knoxville.—A dispatch from Augusta, Ga., states that the Richmond & Danville Company has secured a controlling interest in this company, which is building the South Carolina and Georgia section of the line from Augusta to Knoxville, Tenn. The new owners agree to complete the road.

Boston, Concord & Montreal.—This company has sold its entire issue of $500,000 new bonds at about 106. Nearly all of them were taken in New Hampshire, largely by savings banks and other financial institutions.

Boston, Hoosac Tunnel & Western.—The re-transfer of this road from the Ames party, which has held it about a year, to General Burt, of Boston, has been completed. The Burt party is said to have paid $2,000,000.

For the purpose of building the extension of the road from Schenectady, N. Y., to Buffalo, a corporation known as the Continental Construction & Improvement Company has been organized with a capital of $10,000,000.

Buffalo, New York & Philadelphia.—The reported transfer of this road to the Pennsylvania Railroad Company is officially denied.

Buffalo, Pittsburgh & Western.—Surveys have been about completed for the extension of this road from Warren, Pa., to Salamanca, N. Y., and the contract has been let to Col. Thomas Simpson, who will begin work about June 5.

Arrangements are being made to build a bridge over the Allegheny at Oil City, Pa., to complete a connection between the main line and the Oil City & Ridgeway Branch. This branch is to be extended into the lumber regions of Forest County.

Central, of New Jersey.—The shops at Ashley, Pa., caught fire on the night of May 30, and the large blacksmith shop was destroyed, causing a loss of $10,000.

Chicago & Northwestern.—This company has put on dining cars to run on its through express trains between Chicago and Omaha.

The Menominee River Company, one of this company's proprietary lines, has filed articles for an extension of its road from Florence, Wis., north to the Michigan line (only a few miles) and thence westerly and northerly to Lake Superior. The extension will be 137 miles long, and will also have four short branches, nine miles in all, to iron mines near Florence.

Chicago, Texas & Mexican Central.—This road has been located for 50 miles from Dallas, Tex., southwest, and 27 miles are under contract. Ground was broken April 18, and 10 miles are now graded, while the company expects to have the 27 miles finished by July 1. A section of 25 miles will be let this month, with the intention of having 50 miles in operation by the end of this year. The road is to run from the Red River by Paris to Dallas, and thence by Alvarado and probably Cleburne to the Rio Grande at or near Eagle Pass.

Cincinnati Northern.—This road, on which track was laid last year, has been opened for business from Norwood, O., to Lebanon, 24½ miles. For the present connection is made with the Marietta & Cincinnati at Norwood, 10 miles from Ciacinnati, and business to and from the city passes over that road. Work is in progress on an extension from Norwood into Cincinnati, and it is to be done before the end of the summer.

Cincinnati Southern.—The following statement is made of the earnings for April and the four months ending April 30:

	April.	Four months.
Gross earnings	$173,929.10	$628,193.60
Expenses	79,700.90	307,448.72
Net earnings	$94,228.20	$320,744.88
Interest on capital, etc	9,290.85	35,237.60
Am't paid Trustees	$84,937.35	$285,507.28

The light expenses are accounted for by the fact that the operating company does not provide for maintenance of way, all maintenance and renewal expenses being met by the Trustees.

Denver Union Depot.—The new Union depot in Denver, Col., has been completed, and the trains of all the roads began to use it June 2. It has cost $200,000, and is a very fine building.

Detroit, Butler & St. Louis.—The gap in this road has been closed by laying the track from Adrian, Mich., to Morenci, 13 miles, completing the line of 112 miles from Detroit to Butler, Ind. A special train with officers of the Wabash road was to run over the new line June 3. The ballasting is being hurried up as much as possible.

The separate companies organized in Michigan, Ohio and Indiana have been consolidated and the necessary papers filed. The consolidation is merely formal.

East Tennessee, Virginia & Georgia.—A special meeting has been called for July 29, at which the following questions will be presented to the stockholders: A further issue of stock and bonds to meet new purchases and additions to the property; the purchase of the stock of the Alabama Central; the purchase of the stock of the Knoxville & Ohio, and the endorsement of the extension bonds of that road; the endorsement of bonds of the East Tennessee & Western Nort Carolina road, and the purchase of a part of those bonds.

Fort Wayne, Muncie & Cincinnati.—The plan of reorganization which bondholders are asked to subscribe to in Boston, or at the Farmers' Loan & Trust Company in New York, states that the United States Circuit Court is expected soon to make a decree of sale of this road. It is proposed that the holders of the various classes of bonds should unite to purchase the property. A committee of three is appointed to bid at the sale, and should they become purchasers, they are authorized to take title and organize a corporation and convey the property to it. The terms on which the committee are to organize said coporation shall be as nearly as practicable as follows: Stock to be issued to first-mortgage bondholders for their bonds and eight years' interest, $2,808,000; to equipment bondholders for their bonds and 5¾ years' interest, $483,862; to income bondholders for their bonds, $41,104; to holders of certain coupons on first-mortgage bonds, due prior to April 1, 1872, $16,800; for settlement of certain claims, $150,234; total, $3,500,000. It is also proposed to issue $500,000 more stock (making $4,000,000 in all) to be issued to holders of second-mortgage bonds on payment by them of an assessment of 30 per cent.

Illinois Midland.—A dispatch from Springfield, Ill. May 27, says: "A bill in equity was filed yesterday in the United States Circuit Court for this district by John J Waterbury, of New York, complainant, against the Illinois Midland Railway Company, the Peoria, Atlanta & Decatur Railroad Company, the Paris & Decatur Railroad Company, the Union Trust Company, of New York, and Robert G. Hervey and others, officers and directors of said railroad companies, defendants. The bill is brought to cancel and set aside a deed of conveyance of the property, rights and franchises of the Paris & Decatur Railroad Company to the Peoria, Atlanta & Decatur Railway Company, made Sept. 19, 1874, and to cancel a mortgage executed Jan. 1, 1875, by the Illinois Midland Railway Company to the Union Trust Company, of New York.

"It is charged in the bill that there was a conspiracy between the directors of the Peoria, Atlanta & Decatur Railroad Company, and the majority of the directors of the Paris & Decatur Railroad Company to deprive the latter of its property and franchises, and to defraud the shareholders, and that in pursuance of such conspiracy the deed of conveyance was made, there being no consideration whatever for the same. That afterward the name of the Peoria, Atlanta & Decatur Railroad Company was changed to the Illinois Midland Railway Company, and that in further pursuance of the conspiracy to defraud the Paris & Decatur and its shareholders, the Illinois Midland Railway Company, on Jan. 1, 1875, executed a mortgage to the Union Trust Company of New York, covering all the property, rights and franchises held and owned by the Paris & Decatur Company. No interest whatever has been paid on the bonds of the Illinois Midland, and proceedings have long since been begun by the Union Trust Company to foreclose its mortgage in the United States Circuit Court for this district.

"Both the deed to the Peoria, Atlanta & Decatur Railroad Company and the mortgage of the Illinois Midland to the Union Trust Company were recorded in the counties through which the Paris & Decatur Railroad passes, and thereupon became each a cloud upon the title of said company to its property and franchises in derogation of the rights of its shareholders. It is asked in the bill that the deed be adjudged null and void and canceled, and the mortgage, so far as it affects the property of the Paris & Decatur Railroad Company, adjudged not to be a lien upon that property, and declared null and void. The complaint prays for an injunction against the defendant railroad company, that it be enjoined from disposing of the property of the Paris & Decatur Railroad Company, and against the Union Trust Company, that it may be enjoined from further foreclosure proceedings."

Indianapolis, Peru & Chicago.—It is reported that the parties who own nearly all the stock in this road have sold their interest to the Wabash, St. Louis & Pacific Company. The report is that the road will be extended from Michigan city, Ind., west to a junction with the Chicago & Western Indiana near Dolton, a distance of about 40 miles, making a new line from Indianapolis to Chicago, and also, in connection with the Wabash to Peru, from Toledo to Chicago.

The road extends from Indianapolis to Michigan City, 161 miles. The company has always been a very close corporation, refusing to give any information.

International & Great Northern.—Work is progressing fast on the extension from San Antonio, Tex., to Laredo. The grading is finished for nearly 50 miles, and track has been laid for 30 miles.

Kansas City, Ft. Scott & Gulf.—This company's branch line from Ft. Scott, Kan., to Springfield, Mo., has been completed and was opened for business May 25. The line is 96 miles long, and is made up of the road formerly known as the Springfield & Western Missouri, and of the Ft. Scott, Southeastern & Memphis, both roads being owned by the Kansas City, Ft. Scott & Gulf. Fifteen miles of the line, from Golden City, Mo., to Greenfield, have been built this year. It is stated that the road will be pushed from Springfield southeast toward the Mississippi.

Knoxville & Augusta.—At a meeting held in Knoxville, Tenn., May 31, the stockholders voted to transfer this road to a new company known as the Knoxville & Augusta Railway Company. The new corporation, which was organized on the same day, is controlled by the Richmond & Danville Company; it agrees to complete the road (which is now in operation from Knoxville to Maryville, 16 miles) to the North Carolina line, where it will meet the extension of the old Blue Ridge road, completing the line from Knoxville to a connection with the Atlanta & Charlotte Air Line, and the Columbia and Greenville roads.

Memphis & Little Rock.—It is stated that a controlling interest in this road has been sold to Jay Gould. It has been for some time past understood that the control of the road was held in the interest of the St. Louis, Iron Mountain & Southern, so that this transfer makes no change.

New Bonds.—New issues of bonds have been taken or put upon the market as follows:

The *Chicago, Milwaukee & St. Paul* bonds issued on the Chicago & Pacific Western Division are reported all sold by Kuhn, Loeb & Co., of New York, subscriptions being considerably in excess of the $5,000,000 offered.

The *Nashville, Chattanooga & St. Louis* new issue of $1,000,000 second-mortgage bonds has been awarded to A. Iselin & Co., of New York, at a small fraction above par.

Connotton Valley & Straitsville bonds to the amount of $2,720,000 are offered through George Wm. Ballou & Co. and Charles A. Sweet & Co., of Boston. The bonds have 30 years to run at 7 per cent., and the terms of subscription are $950 for one $1,000 bond and two shares of stock. The road is to the southern branch or division of the Connotton Valley road, and will extend from Canton, O., by Coshocton, Zanesville and New Straitsville to Athens, 136 miles.

Newfoundland.—The bill legalizing the contract between the Newfoundland government and the Railway

Syndicate Company of New York, which recently passed both branches of the Newfoundland Legislature, has received royal signature. The bill incorporates an American company with a section allowing aliens to hold lands on the same terms as British subjects. The company contract to build a line of 400 miles from St. Johns to the copper mines at Hall's Bay, opening a great grazing, timber, grain and mineral region. It will cost $6,000,000 and be done in three years. The company receives from the provincial government a subsidy of $185,000 a year for 35 years and 5,000 acres of land of its own selection for each mile of road built, and all tariffs on materials for the road are abated.

New York, Lake Erie & Western.—The *American Exchange* of May 27 says: "Some time ago the Chicago & Atlantic Railroad Company was organized for the purpose of building a railroad from Marion, O., on the line of the New York, Pennsylvania & Ohio Railroad to Chicago. The parties connected with the enterprise were generally interested in the last-named company, which is the old Atlantic & Great Western Company reorganized. It is now announced that the Chicago & Atlantic Company has practically passed into the control of the New York, Lake Erie & Western. An arrangement has been concluded by which the line from Marion to Chicago will be completed by the Erie Company, the funds for its construction being provided by a syndicate of bankers, under an arrangement with the Erie and the New York, Pennsylvania & Ohio companies. The syndicate is composed of Kuhn, Loeb & Co., Winslow, Lanier & Co., L. Von Hoffman & Co., Charles F. Woerishoffer & Co., Ten Have & Co., of Amsterdam, Holland, and others. Arrangements have been substantially completed for its negotiation of $6,500,000 first-mortgage 6 per cent. bonds of the Chicago & Atlantic Company, for which amount the Erie Company guarantees the completion of the Marion line. Until the road is finished, the Erie road, it is understood, guarantees the payment of the interest on the Chicago & Atlantic loan, and after the completion of the road, the Erie and the New York, Pennsylvania & Ohio companies jointly pledge the gross earnings on all through business derived from or delivered to the Chicago & Atlantic road to the payment of such interest.

"The new road from Marion to Chicago will be about 257 miles long. It is already under contract for completion in from six to nine months. When finished it will be under the control of the Erie, and will furnish that company practically with an independent line from New York to Chicago, by way of the New York, Pennsylvania & Ohio road from Salamanca, N. Y., to Marion. The new Chicago route from this city will, it is claimed, be somewhat shorter than that by any existing trunk line.

"President Hugh J. Jewett, of the New York, Lake Erie & Western Company, declined yesterday to make any statement regarding the enterprise, on the ground that its announcement was premature. The bankers interested in the syndicate for negotiating the Chicago & Atlantic $6,500,000 bonds, however, asserted that the necessary contracts had been signed yesterday."

New York, Pittsburgh & Chicago.—This company has been organized by the parties controlling the Pittsburgh & Western and also several projected lines west of Pittsburgh. The object of the company is to build a narrow-gauge road extending the Pittsburgh & Western to Youngstown, O., and thence to a connection with the Toledo, Delphos & Burlington.

Norfolk & Western.—Notice is given by Mr. George F. Tyler, President, that on Aug. 10, 1881, at the Union National Bank, New York, this company will purchase, at par and accrued interest, the obligations of the Norfolk & Petersburg Railroad Company, the Southside Railroad Company and the Virginia & Tennessee Railroad Company, the payment of the principal of which, by virtue of the order of the Circuit Court of the United States, was extended until Jan. 1, 1888, with the privilege on the part of the Receivers of the Atlantic, Mississippi & Ohio Railroad to purchase the same on payment of principal and interest after notice given as in said order provided. The bonds and unmatured coupons must be presented and surrendered at the time of such purchase and payment. All interest on such bonds will cease on and after Aug. 10, 1881.

Notice is also given that on Aug. 26, 1881, this Company will purchase at par and accrued interest the 8 per cent. interest funding certificates of the Receivers of the Atlantic, Mississippi & Ohio Railroad.

Olean, Bradford & Warren.—Work is now progressing well on the extension of this road from Bradford, Pa., to Warren. The grading is all done to Marshville, 14 miles southwest from Bradford, and track has been laid for six miles.

Oregonian.—Work has been begun on the extension of this road from the Yamhill River north to Portland, Oregon. The rails are on the way to Portland. Two important bridges are under construction, one over the Yamhill, 100 ft. span and 80 ft. high; another over the Willamette at Ray's Ferry, which will have a draw-span of 180 ft., two fixed spans of 236 ft. each, one of 100 ft. and one of 60 ft.

Peoria, Decatur & Evansville.—This company's Evansville Extension, on which track was all laid about two months ago, was finally opened for traffic June 1, when regular passenger and freight trains began to run through from Peoria, Ill., to Evansville, Ind., 250 miles.

Philadelphia & Reading.—Before the Pennsylvania Supreme Court at Harrisburg, May 26, a petition was presented for the reargument in the matter of the appeal of F. B. Gowen and others from the decree of the Common Pleas Court with regard to the legality of the Philadelphia & Reading Railroad election. Four reasons are given, the first of which is that the opinion of the majority of the Court assumes that although the managers of the company are not authorized by the charter to call a meeting of stockholders for the purpose of holding the substitutionary election provided for in the fifth section, yet that they have such power under the by-laws of the company, which provides that the board of managers shall have all the power and authority granted by law to the company except in such matters as may be specially excepted by the by-law. The majority opinion of the Court on this point is quoted, and it is said that this view of the case is not taken by the Court below. The appellants therefore contend that they should have opportunity of showing that the by-law in question has been misunderstood. The second reason offered is that the circumstances under which a substitutionary election meeting could be held have been misunderstood. Third, the opinion of a majority of the Court leads to the conclusion that a failure to make an election attempted at the annual meeting leaves it discretionary, not with the stockholders then assembled, but with the managers to-day, whether and when another election shall be held. Fourth, that the meeting of March 14 was called as a special meeting, and under the 21st section of the charter, the managers being advised that their authority to call meetings exists in this section alone. The Court took the petition and held the matter under advisement.

Port Royal & Augusta.—A dispatch from Augusta, Ga., states that this road has been leased to Mr. Wm. M. Wadley, representing the syndicate now controlling the South Carolina, the Georgia and the Central (of Georgia) roads. The terms of the lease are not stated.

The road is 112 miles long, from Augusta, Ga., to Port Royal, S. C. It crosses the Charleston & Savannah at Yemassee and, with that road, makes a line from Augusta to either Charleston or Savannah, as well as to Port Royal. The present company was organized in 1878 by the bondholders, who bought the road at foreclosure sale. The Georgia Railroad Company holds a considerable interest in the road.

Rogers & Siloam Springs.—This company has been organized to build a branch of the St. Louis & San Francisco road from Rogers, Ark., to Siloam Springs, about 35 miles.

St. Louis, Belleville & Centralia.—This company has been organized to build a railroad from Belleville, Ill., due east to Centralia, on the Illinois Central, about 48 miles, Several of the incorporators are connected with the Illinois & St. Louis Company.

St. Louis & Cairo.—This company has filed articles of incorporation for the purpose of buying and working the Cairo & St. Louis road, which is soon to be sold at foreclosure sale.

St. Louis & Texas.—The articles filed with the Secretary of State of Arkansas by this company, which is to build the Cairo Extension of the Texas & St. Louis road, set forth its line as follows: The main line runs from Texarkana through the counties of Nevada, Ouachita, Calhoun, Dallas, Dorsey, Jefferson, Lonoke, Arkansas, Prairie, Monroe, Woodruff, St. Francis, Cross, Poinsett, Craighead and Mississippi to a point on the western boundary of the state where Buffalo Creek crosses the boundary line. A branch line will run through Poinsett, Craighead, Green and Clay counties, to a point near Chalk Bluff on the northern boundary of the state; also a branch line from the main line in Cross County to a point on the Mississippi River opposite Memphis. The length of the line from Texarkana to Buffalo is 325 miles; of the branch from Buffalo Creek to the northern line of the state, 85 miles; of the branch to the Mississippi River opposite Memphis 50 miles. The capital stock of the main line is $3,250,000; of the branches, $850,000 and $500,000 respectively.

Scioto Valley.—The transfer of cars from this road at Ironton, O., across and up the Ohio River about eight miles to the Chesapeake & Ohio at Ashland, Ky., has been begun.

South Carolina.—Work has been begun on the extension of this company's tracks from the present depot in Charleston to the wharves on the water front of the city. This improvement has long been desired, but the company has not had the money to make it.

Sullivan County.—From June 1 this road, which has been operated by the Central Vermont Company for many years, will be worked by the Vermont Valley Company. Both the Vermont Valley and the Sullivan County roads are now owned by the Connecticut River Railroad Company. The Sullivan road runs from Bellows Falls, Vt., up the east or New Hampshire side of the Connecticut River to Windsor, Vt., crossing the river at each end. It is 26 miles long, and is the connection of the Vermont Central southward with its New London Northern and other lines.

Texas & Pacific.—The track on the extension towards El Paso has reached Big Springs, Texas, 30 miles west of the Colorado, and 293 miles from Dallas. Grading has been in progress for some time from El Paso eastward. It is now reported, however, that this company has sold the finished grade to the Southern Pacific, and will build only until it meets that road, about 140 miles east of El Paso.

Union Pacific.—In Washington, May 31, the Court of Claims overruled the petition of this company to be allowed additional compensation for carrying the mails in postal cars in excess of the rates now and heretofore paid. This decision leaves the present rates of pay unchanged.

Western North Carolina.—The Asheville (N. C.) *Citizen* says: "The work of letting to contract the heavy work on the line of the road between here and Pigeon River has been completed. The portion of the line that has been placed under contract embraces the first eight miles west of the French Broad River, and the first 2½ east of Pigeon, and the contracts have been taken by Mr. Wm. G. Corpening and others on the Pigeon end, and Messrs. Coleman & Co. on this end of the line. Work is to be commenced at once, and the contract requires its completion by Oct. 15. This leaves about 10 miles in the centre, which was to a great extent graded several years ago, and will now have to be brushed up.

"Col. A. B. Andrews, the President of the company, and Major Wilson have been in town during the past two days looking after the work, and Col. Andrews assures us that the whole work on both lines running from here will be pushed forward with all possible rapidity.

"We understand the work goes nobly forward on the railroad down the French Broad. Only a few days will be required to complete the bridge across the French Broad at this place, when the track will at once be laid to or below Alexander's. Capt. Macfarland's force is at work between the mouth of Ivy and Marshall, and he has graded 1½ miles in the last 30 days. Work is being pushed at other points with equal success. Col. Coleman, with his engineering corps, will this week move between the Warm Springs and Paint Rock. On the Tennessee end of the road, between Wolf Creek and Paint Rock, a distance of five miles, the road-bed and bridges are being made, and the track is already down more than two miles of the distance. 'On to Morristown' is now the cry of the railroad men so far as this end of the Western North Carolina Railroad is concerned."

ANNUAL REPORTS.

The following is an index to the reports of companies which have been reviewed in previous numbers of this volume of the *Railroad Gazette*:

Manchester & Lawrence.

This company owns a line from Manchester, N. H., to the Massachusetts line, 22.4 miles, and leases the Methuen Branch of the Boston & Maine, from the state line to Lawrence, Mass., 3.7 miles, making 26.1 miles worked. The report is for the year ending March 31.

A part of the business is done under parole agreement with the Concord Railroad Company.

The company has no funded or floating debt; the capital stock is $1,000,000, or $44,643 per mile owned.

The traffic for the year was as follows:

	1880-81.	1879-80.	Inc. or Dec.	P.c.
Train miles	69,429	70,391	D. 962	1.4
Passengers carried	156,268	135,219	I. 21,049	15.6
Tons freight carried	10,203	.....	.....	....
Ton miles	1,486,651	1,271,709	I. 214,942	16.9

The traffic shows a very considerable increase, especially in passengers.

The statement of earnings is as follows:

Receipts from traffic	$123,395.14
Concord Co., on account of joint business	62,246.75
Total earnings ($7,001.60 per mile)	$185,641.89
Expenses (45.90 per cent)	85,201.53
Net earnings $3,848.29 per mile)	$100,440.36
Dividends, 10 per cent	100.000.00
Surplus for the year	$440.36

This company has paid 10 per cent. regularly for many years past. There are no interest payments to make.

The road has been fully maintained and the usual renewals made. The old differences with the Concord Railroad Company over property jointly owned are in process of settlement. The company is pressing a claim of $4,166 against the state for abatement of tax since decided to be excessive.

Carolina Central.

This company owns a line from Wilmington, N. C., through Charlotte to Shelby, 242 miles. The present company acquired the road through a foreclosure sale May 31, 1880. Its report is for the year ending March 31, including two months under the Receivers, prior to the sale, the object in so reporting being to preserve an unbroken record of operations.

The report says: "The reorganization of the company took place at Weldon, July 14, 1880, when the present board of directors and officers of the company were chosen. There was very considerable delay in carrying out the plan of reorganization, as it was found necessary to have a special act of the Legislature to get authority for placing mortgages on the road and issuing bonds. This authority was secured by special act in January, which act also made the reorganization valid. The first and second-mortgage bonds have been issued, and the third-mortgage bonds are now ready, and as soon as the mortgage can be recorded they can be issued."

The first mortgage is for $2,000,000; second mortgage, $1,500,000; third mortgage, $1,500,000; stock, $1,500,000; total, $6,500,000. The second and third-mortgage bonds are income bonds, entitled to interest only when earned. For the present the stock is placed in the hands of a committee, who are to have full power to vote upon it at all elections, the object being to secure stable management until the road is in complete order.

The current assets and liabilities are as follow:

Unpaid bills and accounts		$43,122
Due other companies		28,892
Balance of Receivers' account		5,159
Total		$77,173
Wilmington bridge bonds	$6,000	
Accounts and balances due	25,037	
Supplies	54,160	
Cash	113,509	
		198,706
Surplus of assets		$121,533

The old debts have been extinguished by the foreclosure, and the company is in good financial condition.

The earnings and expenses for the year were as follows:

	1880-81.	1879-80.	Inc. or Dec.	P. c.
Passengers	$70,844	$59,209	I. $11,635	19.7
Freight	474,534	388,507	I. 86,027	22.1
Mails, etc	18,650	18,803	D. 153	0.8
Total	$564,028	$466,519	I. $97,509	20.9
Expenses	313,193	277,249	I. 35,944	13.0
Net earnings	$250,835	$189,270	I. $61,565	32.6
Gross earn. per mi.	2,331	1,928	I. 403	20.9
Net " " "	1,037	782	I. 255	32.6
Pr. ct. of expenses	55.53	59.37	D. 3.84	

The gain in both earning and expenses was considerable, though the earnings are still light. The net earnings were sufficient to pay 5 per cent. on the entire amount of new bonded debt, or 6 per cent. on the first-mortgage bonds and 4 per cent. on the income bonds.

The income account was as follows:

Net earnings as above		$250,835
Taxes	$10,468	
Interest, Wilmington bridge bonds	13,790	
" paid on first-mortgage bonds	54,000	
		$78,258
Surplus		$172,577
Foreclosure expenses	39,398	
Extraordinary repairs of road	61,287	
" " equipment	5,898	
New construction	18,724	
New equipment	33,644	
		158,951
Balance		$13,626

The report says: "The Atlanta & Charlotte Air Line has lately passed into the hands of the Richmond & Danville by lease. Should the policy of this company be to cut us off from business on that road, it will be necessary for this company to extend its line from Shelby in whatever direction it may deem most advisable. To this end propositions have lately been made, which will be laid before the management at the proper time."